



# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

DMS-DR-2225  
NASA-CR-141,505

PHASE CHANGE PAINT TESTS TO INVESTIGATE  
EFFECTS OF TPS TILES ON HEATING RATES  
OF THE ROCKWELL SPACE SHUTTLE ORBITER  
(TEST OH4C, MODEL 21-0)

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANAGEMENT services

SPACE DIVISION



CHRYSLER  
CORPORATION

February 1975

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Prepared under NASA Contract Number NAS9-13247

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New Orleans, La. 70189

for

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Johnson Space Center  
National Aeronautics and Space Administration  
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: AEDC B-VA352  
NASA Series Number: OH4C  
Model Number: 21-0  
Test Date: 26 September 1973  
Occupancy Hours: 8

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ABSTRACT

This report presents model information and data from wind tunnel tests conducted on 0.0175-scale models of the RI Space Shuttle Orbiter in the AEDC Tunnel B. These models were built to Orbiter lines VL70-000139. Their model identity number is 21-0. These tests, OH4C, were conducted in one eight-hour shift Sept. 26, 1973. Test OH3A/OH3B, conducted in July 1973, investigated effects of various width gaps between tiles in the TPS; effects of gap depth and orientation were not investigated. Tests described in this report investigate gap depth and orientation effects using the phase change paint technique to determine heating rates.



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## TABLE OF CONTENTS

	Page
ABSTRACT	iii
INDEX OF MODEL FIGURES	2
INTRODUCTION	3
NOMENCLATURE	4
CONFIGURATIONS INVESTIGATED	7
INSTRUMENTATION	10
TEST FACILITY DESCRIPTION	11
TEST PROCEDURE	12
DATA REDUCTION	13
TABLES	
I.    PHASE CHANGE COATING TEST DATA SUMMARY SHEET	20
II.   MODEL DIMENSIONAL DATA	25
FIGURES	
MODEL	33
DATA	42

## INDEX OF MODEL FIGURES

Figures	Title	Page
1.	Orbiter 3-View.	33
2.	Grid patterns.	
a.	Rectangular Patterns	34
b.	Diamond Pattern	35
3.	Paint stripe pattern.	
a.	Side View	36
b.	Bottom View	37
4.	Grid pattern.	
a.	Side Camera View, $\alpha = 30^\circ$	38
b.	Side Camera Grid, $\alpha = 35^\circ$	39
c.	Top Camera Grid, $\alpha = 30^\circ$	40
d.	Top Camera Grid, $\alpha = 35^\circ$	41

## INTRODUCTION

Tests were conducted on 0.0175-scale models of the Shuttle Orbiter at the Arnold Engineering Development Center (AEDC), von Karman Facility, Tunnel B.

Nominal Mach number was 8.0. Parameter variations included Reynolds numbers from .5 to  $3.7 \times 10^6$  per foot and angles of attack of  $30^\circ$  and  $35^\circ$  at  $0^\circ$  sideslip.

Primary objective was to evaluate aerodynamic heating effects of the tiles in the thermal protection system (TPS). Previous investigations (OH3A/OH3B in July 1973, documented in DMS-DR-2100) of effects of the gaps between TPS tiles on aerodynamic heating rates looked into effects of gap widths. Tests in this report investigate tile gap depth and orientation to the flow. Tile patterns were cut into the undersides of Orbiter models to simulate the gaps; one model was left smooth for comparison.

Presented in Table I is a summary of runs completed. Thermal contours are in figure 4 and in the data figures section.

# NOMENCLATURE

<u>Symbol</u>	<u>SADSAC Symbol</u>	<u>Definition</u>
$c$		local chord, in
$C_p$	C	specific heat of model material, BTU/lb-°F
$g$		acceleration due to gravity, ft/sec <sup>2</sup>
$h(R_T)$	$H(R_T T_0)$	thin film heat transfer coefficient based on $R_T$ , BTU/ft <sup>2</sup> -sec-°F
$h$		thin film heat transfer coefficient, BTU/ft <sup>2</sup> -sec-°F
$h_s$	HREF	theoretical stagnation point thin film heat trans- fer coefficient, BTU/ft <sup>2</sup> -sec-°F
$k$	K	thermal conductivity of model material, BTU/ft-sec-°F
LH		left hand side
$M_\infty$		freestream Mach number
$N_R$		nose radius, ft
$P_\infty$	P-INF	freestream static pressure, psia
$P_0$	P0	stagnation pressure, psia
$P_1, P_2$		Mach parameters, defined in context
$P_r$		Prandtl number
$\dot{q}$		heat transfer rate, BTU/ft <sup>2</sup> -sec
$\dot{q}_s$		theoretical stagnation point heat transfer rate, BTU/ft <sup>2</sup> -sec
$q_\infty$	Q-INF	freestream dynamic pressure, psia
$R$		gas constant, ft-lb <sub>f</sub> /lb <sub>m</sub> -°R

# NOMENCLATURE (Continued)

$R_N$		Reynolds number
$R_N/\text{ft}$	RE/FT	unit Reynolds number, per foot
$R_T$		recovery factor
RH		right hand side
ST	STREF	Stanton number
t		time, sec.
T		temperature, °F
$\bar{T}$	TBAR	normalized temperature parameter, °F
$T_\infty$	T-INF	freestream temperature, °F
$T_0$	T0	stagnation temperature, °F
$T_{AW}$		adiabatic wall temperature, °F
$T_{IN}$		model initial temperature, °F
$T_{PC}$		phase change paint temperature, °F
TPS		thermal protection system
$V_\infty$	V-INF	freestream velocity, ft/sec
$V_e$		local velocity, ft/sec
X		distance coordinate along model wall, ft
$Z_0$		Orbiter water line, in
$\alpha$		model angle of attack, deg.

# NOMENCLATURE (Concluded)

$\beta$		defined in context
$\gamma$		ratio of specific heat of air
$\delta$		local surface angle relative to freestream flow, deg.
$\theta$		local surface angle relative to model centerline, deg.
$\rho$	RHO	model material density, lbm/ft <sup>3</sup>
$\rho_s$		freestream air stagnation density, lbm/ft <sup>3</sup>
$\rho_w$		air density along model wall, lbm/ft <sup>3</sup>
$\rho_\infty$	RHO-INF	freestream air density, lbm/ft <sup>3</sup>
$\mu$		viscosity, lbm/ft-sec
$\mu_\infty$	MU-INF	freestream viscosity, lbm/ft-sec
$\mu_w$		air viscosity along model wall, lbm/ft-sec
$\mu_s$		air stagnation viscosity, lbm/ft-sec

## CONFIGURATIONS INVESTIGATED

The models were 0.0175-scale representations of the Rockwell International Space Shuttle Orbiter. The configuration was defined by Rockwell lines control drawing VL70-000139. Model design and fabrication work was subcontracted to Grumman Aerospace Corporation in Bethpage, New York.

The models were cast in one piece, using a Grumman epoxy compound called material "G". The specific material composition is proprietary to Grumman, but material properties taken from samples analysed by the Grumman lab were provided. The Orbiters were cast around a hollow epoxy-fiber glass sleeve which was used for tunnel installation.

Six Orbiter models were used in this test. Descriptions of the configuration variations follow in this section.

All models had the same elevon deflections ( $+5^{\circ}$ -LH and  $0^{\circ}$ -RH). The rudders of all models were flared symmetrically  $40^{\circ}$  ( $20^{\circ}$  half angle). To obtain valid melting rate data, the top wing surface was slabbed from the elevon hinge line to the trailing edge to increase material thickness. The bottom surface of the wing was held to contour (even when the elevon was deflected). All Orbiters tested except one had aluminum nose caps installed to prevent ablation or similar degradation of nose contour due to high tunnel temperatures and aerodynamic heating.

One Orbiter model was painted with a stripe reference system to facilitate data reduction and analysis by accounting for camera distortion and perspective. It was not used as a test article.

A  $15^{\circ}$  "dog-leg" sting mated to an AEDC  $15^{\circ}$  offset knuckle was used



## CONFIGURATIONS INVESTIGATED (Continued)

to obtain the required angles of attack. Although the capability was built into the models, no runs were made with the Orbiter yawed.

Since there were no removable parts on these models and no configuration variables except grooving for TPS tile simulation, individual components were not listed on the run schedule. However, for information, the following nomenclature symbols had been assigned to the components of the configuration tested:

B <sub>17</sub>	fuselage body
M <sub>4</sub>	OMS pod
C <sub>7</sub>	canopy
F <sub>5</sub>	body flap
W <sub>103</sub>	wing
E <sub>22</sub>	elevon
V <sub>7</sub>	vertical tail
R <sub>5</sub>	rudder

A complete description of dimensional data for each component is given in Table II.

A new set of symbols was generated during this test to differentiate between the models. These symbols were used in the run schedule and are as follows:

# CONFIGURATIONS INVESTIGATED (Concluded)

<u>Nomenclature</u>	<u>Description</u>	<u>Model Assembly No.</u>
S-22x	smooth bottom, elevons +5°, 0°, no metal nose cap	550-22X
R <sub>1</sub>	machined square grid on bottom surface, .006" side x .006" deep	550-21
R <sub>2</sub>	machined square grid on bottom surface, .016" wide x .016" deep	550-23
R <sub>6</sub>	machined diamond grid on bottom surface, .015" wide x .060" deep	550-30
R <sub>7</sub>	machined square grid on bottom surface, .015" wide x .060" deep	550-32
None	smooth bottom, elevon +5°, 0°, paint striped reference model	550-26

## INSTRUMENTATION

The following instrumentation items were required for the test:

- 1) Three 70 mm cameras.
- 2) One 16 mm motion picture camera.
- 3) A digital contact thermometer for recording model initial temperature.
- 4) A video tape television set-up with capability for on-line monitoring and replay.

## TEST FACILITY DESCRIPTION

Arnold Engineering Development Center (AEDC) is an Air Force facility located in Tullahoma, Tenn. The tunnel used, Tunnel B, is in the von Karman Facility. Engineering and other technical operations in this tunnel are conducted by contractor personnel of ARO, Inc.

Tunnel B is a continuous, closed circuit, variable density wind tunnel with an axisymmetric contoured nozzle and a 50-inch diameter test section. The tunnel can be operated at nominal Mach numbers of 6 or 8 at stagnation pressures from 20 to 300 and 50 to 900 psia, respectively, and at stagnation temperatures of up to 1350° R. The model may be injected into the tunnel for a test run and then retracted for model cooling or model changes without interrupting the tunnel flow.

## TEST PROCEDURE

The model was installed inverted in the tunnel. Just prior to each run, the initial temperature of the model was measured using a contact thermometer. This thermometer consisted of a thermocouple mounted at the end of a probe which was placed against the model surface.

Three cameras were set up to take continuous sequence pictures of the model top, side and bottom views. In addition, a movie camera was installed to obtain a more detailed record of the paint melt pattern on the Orbiter bottom surface.

After initial start-up, the tunnel was running continuously and flow was always established in the test section. The model, originally in an injection chamber outside the tunnel, was injected into the airstream to gather data and then returned to the chamber. This injection chamber was sealed against air leakage to the tunnel and to the atmosphere.

Continuous sequence pictures were taken throughout the test period. The duration of the test period varied with the paint melt temperature selected and estimated heating rates. After injection and retraction, the model was removed from the sting and a freshly painted model installed in its place.

## DATA REDUCTION

The phase change paint technique is an approximate method of determining aerodynamic heating rates from hypersonic wind tunnel tests. Briefly, it involves the spray application of a temperature-sensitive paint to a model prior to installation in a wind tunnel. The paint dries in a thin coat of opaque solid which, when heated to a given temperature, will turn into a colorless liquid. Sudden exposure (by injection into the air flow) to a hypersonic airstream will initiate aerodynamic heating of the model surface. The paint will melt (change phase) when the local surface temperature reaches its calibrated melt temperature. The propagation of this melt line is recorded by a camera which takes pictures at a preset rate. Later, each frame is correlated with the amount of time the model had been in the flow to obtain aerodynamic heating rates.

A paint stripe reference system was on one Orbiter. Pictures were taken of the model at the two angles of attack. These pictures are presented in this report so the actual position of various melt lines can be determined from the paint stripe models despite any distortion due to camera perspective. Heating rates along each melt line are determined as described below.

Adiabatic wall temperature ( $T_{AW}$ ) was determined. To obtain this, the ratio of adiabatic wall temperature to stagnation temperature ( $T_0$ ) was calculated by:

$$\frac{T_{AW}}{T_0} = .867 + .133 \sin^{1.55} \delta$$

## DATA REDUCTION (Continued)

Where:  $\delta = \alpha + \theta$

$\alpha$  is the model angle of attack

$\theta$  is the surface deflection relative to the model centerline  
(usually zero or assumed zero)

This ratio,  $\frac{T_{AW}}{T_o}$ , is called the "recovery factor" ( $R_T$ ). It represents the ratio of the freestream dynamic temperature recovered at the (model) wall.

Since  $T_o$  was measured,  $T_{AW}$  was determined from  $[\frac{T_{AW}}{T_o}] \times T_o$ .

Using  $T_{AW}$ , the value of the parameter  $\bar{T}$  was calculated:

$$\bar{T} = \frac{T_{PC} - T_{IN}}{T_{AW} - T_{IN}}$$

Where:  $T_{PC}$  = phase change point melt temperature ( $^{\circ}\text{F}$ )

$T_{IN}$  = model initial temperature ( $^{\circ}\text{F}$ )

$T_{AW}$  = adiabatic wall temperature ( $^{\circ}\text{F}$ )

Using  $\bar{T}$ ,  $\beta$  is determined from an iterative solution of:

$$1 - \bar{T} = e^{\beta^2} (1 - \text{erf } \beta)$$

With  $\beta$  obtained from the above expression, the heat transfer coefficient ( $h$ ) was determined from:

$$h = \frac{\beta \sqrt{c_p k \rho}}{\sqrt{t}}$$

Where  $k$  = thermal conductivity of the model material (BTU/ft-sec- $^{\circ}\text{F}$ )

$\rho$  = density of model material (lbm/ft<sup>3</sup>)

# DATA REDUCTION (Continued)

$C_p$  = specific heat of model material (BTU/lb-°F)

$t$  = time in seconds

The aerodynamic heating rate  $\dot{q}$  was calculated from  $\dot{q} = h (T_{AW} - T_{PC})$

The stagnation point heat transfer coefficient and heating rate is calculated using the equations below:

$$h_s = (.768)(C_p)(P_r)^{-0.6}(\rho_w \mu_w)^{.1}(\rho_s \mu_s)^{.4} \sqrt{\frac{dVe}{dx}}$$

Where:  $P_r = \frac{\mu C_p}{k}$  ( $\mu$ ,  $C_p$  and  $k$  for air)

$\rho_w$  = air density along model wall (lbm/ft<sup>3</sup>)

$\rho_s$  = freestream stagnation density (lbm/ft<sup>3</sup>)

$\mu_w$  = air viscosity along model wall (lbm/ft-sec)

$\mu_s$  = stagnation air viscosity (lbm/ft-sec)

$h_s$  = theoretical stagnation point thin film heat transfer coefficient (BTU/ft<sup>2</sup>-sec-°F)

and, 
$$\frac{dVe}{dx} = \frac{1}{N_R} \sqrt{2RgT_0 \left[ 1 - \frac{1}{P_1 P_2} \right]}$$

$N_R$  = nose radius (ft)

$R$  = gas constant = 53.35  $\left( \frac{\text{Ft-lb}_f}{\text{lb}_m - ^\circ\text{R}} \right)$

$g$  = gravitational constant = 32.2  $\left( \frac{\text{lb}_m \text{ Ft}}{\text{lb}_f \text{ sec}^2} \right)$

$T_0$  = stagnation temperature (°R)



# DATA REDUCTION (Continued)

$$P_1 = \left[ \frac{\gamma+1}{2} M_\infty^2 \right]^{\frac{\gamma}{\gamma-1}}$$

$\gamma$  = ratio of specific heat of air

$M_\infty$  = freestream Mach number

$$P_2 = \left[ \frac{\gamma+1}{2\gamma M_\infty^2 - (\gamma-1)} \right]^{\frac{\gamma}{\gamma-1}}$$

The theoretical stagnation point heating rate ( $\dot{q}_s$ ) is calculated from:

$$\dot{q}_s = h_s (T_{AW} - T_{PC})$$

Because each model had a slightly different set of  $\sqrt{c_p k \rho}$  values, a weighted average was used to ease the operational problems involved in having sets of values unique to each model. The following values were used in the data reduction for all models:

TABLE 1

<u><math>T_{PC}</math> (°F)</u>	<u><math>\sqrt{c_p k \rho}</math> (BTU/ft<sup>2</sup>-sec<sup>1/2</sup> - °F)</u>
113	.0475
125	.0482
131	.0486
150	.0496
169	.0506
175	.0509
200	.0519
225	.0528
250	.0535
300	.0544
350	.0550

# DATA REDUCTION (Continued)

400	.0555
450	.0553
500	.0542
550	.0542

Values of the recovery factor  $T_{AW}/T_o$  used in the data reduction are given below:

<u>Angle of Attack (Deg.)</u>	<u>Recovery Factor (<math>T_{AW}/T_o</math>)</u>	
	<u>Windward View</u>	<u>Side and Upper Surface Views</u>
30	.912	.90
35	.923	.90

The data presented in this report are contour plots which show isotherms for selected frames of data and corresponding tabulated data. This tab data are in the format provided by AEDC as requested by Rockwell and was published in AEDC-DR-73-27.

The run number is under the heading "GROUP." There are contour plots of camera views top and side. (Since the model was installed in an inverted position, the top camera recorded the Orbiter bottom surface). Because tracings were made only when significant data were recorded, many runs do not have all views presented.

The "T" or "S" in the extreme left column of the listings indicate whether the data is for the top or side camera. The column headed "PIC NO" gives the frame numbers which can be found on the tracings corresponding to various isotherms. The data user can then match a drawn isotherm from the data tracings to a computed  $H(TO)/HREF$  in the tab listings. Data

## DATA REDUCTION (Continued)

reduction equations are described above.

Statements made below on data uncertainty are based on information presented in the AEDC data report for this test, AEDC-DR-73-27, by W. R. Martindale (ARO, Inc.).

Uncertainties of the basic tunnel parameters were estimated from repeat calibrations of the  $P_o$  and  $T_o$  instruments and from the repeatability and uniformity of the tunnel flow during calibrations. The parameters,  $P_o$ ,  $T_o$  and Mach No., with their uncertainties, were then used to compute the uncertainties in the other parameters dependent on these by means of the Taylor series method of error propagation.

<u>Parameter</u>	<u>Uncertainty (percent)</u>
Mach No.	$\pm 0.3$
$P_o$	$\pm 0.5$
$T_o$	$\pm 0.5$
$R_e/ft$	$\pm 1.2$

An accurate statement on the precision of the data is not possible because it is up to the judgment of the film reader as to where to trace the paint melt line for a specific frame. A statement is possible for the heat transfer coefficient,  $h$ , on the tab data, however. This heat transfer coefficient is computed from an equation and is a function of  $\Delta t$ ,  $\sqrt{c_p k \rho}$ ,  $T_{IN}$ ,  $T_{AW}$ , and  $T_{PC}$ .

# DATA REDUCTION (Concluded)

<u>Parameter</u>	<u>Uncertainty (percent)</u>
$\Delta t$	$\pm 1.0$
$\sqrt{c_p k \rho}$	$\pm 10.0$
$T_{IN}$	$\pm 0.5$
$T_o (T_{AW})$	$\pm 1.0$
$T_{PC}$	$\pm 0.5$

It should be noted that the above uncertainties in  $T_{PC}$  and  $T_{AW}$  are only the nominal measurement uncertainties. As mentioned above,  $T_{PC}$  is affected by where the melt line is judged to be when tracing.  $T_{AW}$  is dependent on the correctness of the assumption for the value of the recovery factor.

However, using the above listed uncertainties with the equation for the heat transfer coefficient  $h$ , and taking the square root of the sum of the squares, the following uncertainties for  $h$  are determined:

$h$  uncertainty  $\approx 13\%$  for  $T_{PC} \leq 200^\circ\text{F}$

$h$  uncertainty  $\approx 11\%$  for  $T_{PC} > 200^\circ\text{F}$

TABLE I. PHASE CHANGE COATING TEST DATA SUMMARY SHEET

TEST TITLE: PHASE CHANGE PAINT TEST OF A ROCKWELL - 139 ORBITERTEST NUMBER: OH 4C TEST FACILITY: AEDC BTEST DATE: 9-26-73 TEST ENGINEER: M. QUAN

Run No.	Model Configuration Identification	Model Scale	Free Stream Mach Number	Total Pressure (psia)	Total Temp. (°F)	Initial Temp. (°F)	RNX10 <sup>6</sup> Ft	Phase Change Temp. (°F)	Model Position (degrees)			Camera** Location (in)		
									$\alpha$	$\beta$	$\phi$	X	Y	Z
1	R <sub>1</sub>	.0175	8	210	810	79	1.0	200	30	0	0			
2	R <sub>6</sub>					81		250						
3	R <sub>7</sub>					79		250						
4	R <sub>1</sub>					80		131						
5	R <sub>6</sub> (DATA N.G.)													
6	R <sub>7</sub>	.0175	8	210	810	80	1.0	175	30	0	0			
7	S-22x					78		250						
8	R <sub>6</sub>					80		350						
9	R <sub>7</sub>					82		350						
10	S-22x					80		175						
11	R <sub>6</sub>					81		175						
12	R <sub>7</sub>			425	830	80	2.0	350						
13	S-22x					81		350						

\*\* X axis parallel to stream (+downstream, -upstream)

Y axis (+right, -left, as viewed from the rear)

Z axis (+up, -down)

\* Taw = adiabatic wall temperature

TABLE I. PHASE CHANGE COATING TEST DATA SUMMARY SHEET (Continued)

TEST TITLE: PHASE CHANGE PAINT TEST OF A ROCKWELL -139 ORBITER

TEST NUMBER: OH4C TEST FACILITY: AEDC B

TEST DATE: 9-26-73 TEST ENGINEER: M. QUAN

Run No.	Model Configuration Identification	Model Scale	Free Stream Mach Number	Total Pressure (psia)	Total Temp. (°F)	Initial Temp. (°F)	RNX106 Ft	Phase Change Temp. (°F)	Model Position (degrees)			Camera** Location (in)		
									$\alpha$	$\beta$	$\phi$	X	Y	Z
14	R <sub>6</sub>	0.175	8	425	830	81	2.0	350	30	0	0			
15	R <sub>7</sub>					84		250						
16	R <sub>1</sub>					79		350						
17	R <sub>6</sub>					81		250						
18	R <sub>2</sub>					78		350						
19	R <sub>1</sub>					81		250						
20	R <sub>6</sub>					82		200						
21	R <sub>2</sub>					80		250						
22	R <sub>1</sub>					81		175			✓			
23	R <sub>7</sub>					83		350	35					
24	R <sub>2</sub>					82		175	30					
25	R <sub>6</sub>					81		350	35					
26	R <sub>7</sub>	✓	✓	✓	✓	84	✓	250	✓	✓	✓	✓	✓	✓

\*\* X axis parallel to stream (+downstream, -upstream)

Y axis (+right, -left, as viewed from the rear)

Z axis (+up, -down)

\* T<sub>aw</sub> = adiabatic wall temperature

TABLE I. PHASE CHANGE COATING TEST DATA SUMMARY SHEET (Continued)

TEST TITLE: PHASE CHANGE PAINT TEST OF A ROCKWELL -139 ORBITERTEST NUMBER: OH4C TEST FACILITY: AEDC BTEST DATE: 9-26-73 TEST ENGINEER: M. QUAN

Run No.	Model Configuration Identification	Model Scale	Free Stream Mach Number	Total Pressure (psia)	Total Temp. (°F)	Initial Temp. (°F)	RNX10 <sup>6</sup> Ft	Phase Change Temp. (°F)	Model Position (degrees)			Camera** Location (in)		
									$\alpha$	$\beta$	$\phi$	X	Y	Z
27	R <sub>6</sub>	.0175	8	425	830	87	2.0	250	35	0	0			
28	R <sub>2</sub>			↓	↓	82	↓	200	30					
29	R <sub>7</sub>			600	860	85	2.75	450						
30	R <sub>6</sub>					84		400						
31	R <sub>2</sub>					81		400						
32	R <sub>1</sub>					81		400						
33	S-22x					79		400						
34	R <sub>6</sub>					83		300						
35	R <sub>1</sub>					83		300						
36	S-22x					82		200						
37	R <sub>6</sub>	↓	↓	↓	↓	86	↓	200	↓	↓	↓			
38	R <sub>7</sub> (DATA N.G.)													
39	R <sub>1</sub>	.0175	8	600	860	83	2.75	200	30	0	0			

\*\* X axis parallel to stream (+downstream, -upstream)

Y axis (+right, -left, as viewed from the rear)

Z axis (+up, -down)

\* T<sub>aw</sub> = adiabatic wall temperature

TABLE I, PHASE CHANGE COATING TEST DATA SUMMARY SHEET (Continued)

TEST TITLE: PHASE CHANGE PAINT TEST OF A ROCKWELL -139 ORBITER

TEST NUMBER: OH4C TEST FACILITY: AEDC B

TEST DATE: 9-26-73 TEST ENGINEER: M. QUAN

Run No.	Model Configuration Identification	Model Scale	Free Stream Mach Number	Total Pressure (psia)	Total Temp. (°F)	Initial Temp. (°F)	RNX10 <sup>6</sup> Ft	Phase Change Temp. (°F)	Model Position (degrees)			Camera** Location (in)		
									$\alpha$	$\beta$	$\phi$	X	Y	Z
40	R <sub>2</sub>	.0175	8	600	860	81	2.75	200	30	0	0			
41	R <sub>7</sub>			↓	↓	88	↓	300						
42	R <sub>1</sub>			860	880	83	3.7	550						
43	R <sub>2</sub>					83		550						
44	R <sub>7</sub>					85		550						
45	R <sub>1</sub>					84		300						
46	R <sub>2</sub>					85		300						
47	R <sub>7</sub>					86		400						
48	R <sub>6</sub>					82		550						
49	S-22X					82		550						
50	R <sub>7</sub>					89		250						
51	R <sub>6</sub>					85		450						
52	S-22X			↓	↓	84	↓	225	↓	↓	↓	↓	↓	↓

\*\* X axis parallel to stream (+downstream, -upstream)

Y axis (+right, -left, as viewed from the rear)

Z axis (+up, -down)

\* T<sub>aw</sub> = adiabatic wall temperature





TABLE II. - MODEL DIMENSIONAL DATA

MODEL COMPONENT : BODY - B<sub>17</sub>

GENERAL DESCRIPTION : Fuselage, 139 configuration, light-weight  
orbiter per Rockwell Lines VL70-000139

MODEL SCALE: 0.01755

DRAWING NUMBER : VL70-000139

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length, In.	<u>1290.3</u>	<u>22.58025</u>
Max Width , In.	<u>267.6</u>	<u>4.6830</u>
Max Depth , In.	<u>244.5</u>	<u>4.27875</u>
Fineness Ratio	<u>4.82175</u>	<u>4.82175</u>
Area - Ft <sup>2</sup>	<u></u>	<u></u>
Max. Cross-Sectional	<u>386.67</u>	<u>0.11842</u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>

TABLE II (CONT'D)

MODEL COMPONENT: OMS Pod - M<sub>4</sub>GENERAL DESCRIPTION: Configuration 3 per Rockwell Lines VL70-000139NOTE: M<sub>4</sub> identical to M<sub>3</sub>, except intersection to fuselage.Model Scale = 0.01755DRAWING NUMBER VI70-000139

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length - IN	<u>346.0</u>	<u>6.072</u>
Max Width - IN	<u>108.0</u>	<u>1.895</u>
Max Depth - IN	<u>113.0</u>	<u>1.983</u>
Fineness Ratio	<u>          </u>	<u>          </u>
Area - FT <sup>2</sup>	<u>          </u>	<u>          </u>
Max Cross-Sectional	<u>          </u>	<u>          </u>
Planform	<u>          </u>	<u>          </u>
Wetted	<u>          </u>	<u>          </u>
Base	<u>          </u>	<u>          </u>

Centerline of OMS pods

WP = 463.9 INFS: WP = 400 + 63.9 = 463.9

BP = 80.0 INFS

Length: 1214.0 to 1560.0 = 346.0 INFS

TABLE II (CONT'D)

MODEL COMPONENT : CANOPY - C7

GENERAL DESCRIPTION : Configuration 3 per Rockwell Lines vL70-000139  
Insufficient information to complete dimensional data at this time.

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MODEL SCALE: 0.01755

DRAWING NUMBER : VL70-000139

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ( $X_0=433$ to $X_0=670$ ), In. FS	<u>432.7</u>	<u>7.57225</u>
Max Width	<u>571.40</u>	<u>9.99950</u>
Max Depth	<u>                    </u>	<u>                    </u>
Fineness Ratio	<u>                    </u>	<u>                    </u>
Area	<u>                    </u>	<u>                    </u>
Max. Cross-Sectional	<u>                    </u>	<u>                    </u>
Planform	<u>                    </u>	<u>                    </u>
Wetted	<u>                    </u>	<u>                    </u>
Base	<u>                    </u>	<u>                    </u>

TABLE II (CONT'D)

MODEL COMPONENT : BODY FLAP - F<sub>5</sub>GENERAL DESCRIPTION : 3 configuration per Rockwell LinesVL70-000139MODEL SCALE: 0.01755DRAWING NUMBER : VL70-000139

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length, In.	<u>84.70</u>	<u>1.48225</u>
Max Width , In.	<u>267.6</u>	<u>4.6830</u>
Max Depth	<u>          </u>	<u>          </u>
Fineness Ratio	<u>          </u>	<u>          </u>
Area - Ft <sup>2</sup>	<u>          </u>	<u>          </u>
Max. Cross-Sectional	<u>          </u>	<u>          </u>
Planform	<u>142.5</u>	<u>0.04365</u>
Wetted	<u>          </u>	<u>          </u>
Base	<u>38.0958</u>	<u>0.01167</u>

TABLE II (CONL'D)

MODEL COMPONENT: WING-W 103GENERAL DESCRIPTION: Configuration 3 Orbiter per Lines VL70-000139.NOTE: Same planform as W87, except dihedral at TE

Scale Model = 0.01755

TEST NO.DWG. NO. VL70-000139DIMENSIONS:FULL-SCALEMODEL SCALETOTAL DATAArea (Theo.)  $\text{Ft}^2$ 

Planform

2690.00

0.824

Span (Theo) In.

936.68

16.392

Aspect Ratio

2.265

2.265

Rate of Taper

1.177

1.177

Taper Ratio

0.200

0.200

Dihedral Angle, degrees (@ TE of Elevon)

3.500

3.500

Incidence Angle, degrees

3.000

3.000

Aerodynamic Twist, degrees

+3.000

+3.000

Sweep Back Angles, degrees

45.000

45.000

Leading Edge

-10.24

-10.24

Trailing Edge

35.209

35.209

0.25 Element Line

Chords:

Root (Theo) B.P.O.O.

689.24

12.062

Tip, (Theo) B.P.

137.85

2.412

MAC

474.81

8.309

Fus. Sta. of .25 MAC

1136.89

19.896

W.P. of .25 MAC

299.20

5.236

B.L. of .25 MAC

182.13

3.187

EXPOSED DATAArea (Theo)  $\text{Ft}^2$ 

1752.29

0.537

Span, (Theo) In. BP108

720.68

12.612

Aspect Ratio

2.058

2.058

Taper Ratio

0.2451

0.2451

Chords

Root BP108

562.40

9.842

Tip  $1.00 \frac{b}{2}$ 

137.85

2.412

MAC

393.03

6.878

Fus. Sta. of .25 MAC

1185.31

20.743

W.P. of .25 MAC

300.20

5.254

B.L. of .25 MAC

251.76

2.516

Airfoil Section (Rockwell Mod NASA)

XXXX-64

Root  $\frac{b}{2}$  =

0.10

0.10

Tip  $\frac{b}{2}$  =

0.12

0.12

Data for (1) of (2) Sides

Leading Edge Cuff

Planform Area  $\text{Ft}^2$ 

120.33

0.037

Leading Edge Intersects Fus M. L. @ Sta

560.0

9.800

Leading Edge Intersects Wing @ Sta

1035.0

18.1125

TABLE II (CONT'D)

MODEL COMPONENT: ELEVON E-22GENERAL DESCRIPTION: 3 Configuration per W103 Rockwell LinesVL70-000139 data for (1) of (2) sidesScale Model = 0.01755DRAWING NUMBER: VL70-000139

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - FT <sup>2</sup>	<u>205.52</u>	<u>0.063</u>
Span (equivalent) - IN.	<u>353.34</u>	<u>6.183</u>
Inb'd equivalent chord	<u>114.78</u>	<u>2.009</u>
Outb'd equivalent chord	<u>55.00</u>	<u>0.963</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>.208</u>	<u>.208</u>
At Outb'd equiv. chord	<u>.400</u>	<u>.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.00</u>	<u>0.00</u>
Tailing Edge	<u>-10.24</u>	<u>-10.24</u>
Hingeline	<u>0.00</u>	<u>0.00</u>
Area Moment (Normal to hinge line) - FT <sup>3</sup>	<u>1548.07</u>	<u>0.008</u>
Product of Area Moment		

TABLE II (CONT'D)

MODEL COMPONENT: VERTICAL - V<sub>7</sub>GENERAL DESCRIPTION: Centerline vertical tail, double-wedge airfoil with rounded leading edge.NOTE: Same as V<sub>6</sub>, but with manipulator housing removed.MODEL SCALE: 0.01755

DRAWING NUMBER:

VL70-000139DIMENSIONS:FULL-SCALEMODEL SCALETOTAL DATA

Area (Theo) Ft <sup>2</sup>	<u>425.92</u>	<u>0.130</u>
Planform		
Span (Theo) In	<u>315.72</u>	<u>5.525</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>0.404</u>	<u>0.404</u>
Sweep Back Angles, degrees		
Leading Edge	<u>45.000</u>	<u>45.000</u>
Trailing Edge	<u>26.249</u>	<u>26.249</u>
0.25 Element Line	<u>41.130</u>	<u>41.130</u>
Chords:		
Root (Theo) WP	<u>268.50</u>	<u>4.699</u>
Tip (Theo) WP	<u>108.47</u>	<u>1.898</u>
MAC	<u>199.81</u>	<u>3.497</u>
Fus. Sta. of .25 MAC	<u>1463.50</u>	<u>25.611</u>
W. P. of .25 MAC	<u>635.522</u>	<u>11.122</u>
B. L. of .25 MAC	<u>0.00</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle Deg	<u>10.000</u>	<u>10.00</u>
Trailing Wedge Angle Deg	<u>14.920</u>	<u>14.920</u>
Leading Edge Radius	<u>2.0</u>	<u>0.035</u>
Void Area	<u>13.17</u>	<u>0.004</u>
Blanketed Area	<u>0.00</u>	



TABLE II (CONT'D)

MODEL COMPONENT: RUDDER - R<sub>5</sub>GENERAL DESCRIPTION: 2A, 3, and 3A configurations per RockwellLines VL70-000095MODEL SCALE: 0.01755DRAWING NUMBER: VL70-000139, VL70-000095DIMENSIONS:

	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - Ft <sup>2</sup>	<u>106.38</u>	<u>0.033</u>
Span (equivalent), In.	<u>201.0</u>	<u>3.518</u>
Inb'd equivalent chord, In.	<u>91.585</u>	<u>1.603</u>
Outb'd equivalent chord, In.	<u>50.833</u>	<u>0.890</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>34.83</u>	<u>34.83</u>
Tailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
Area Moment (Normal to hinge line), Ft <sup>3</sup> (Product of area and mean chord)	<u>526.13</u>	<u>0.00282</u>

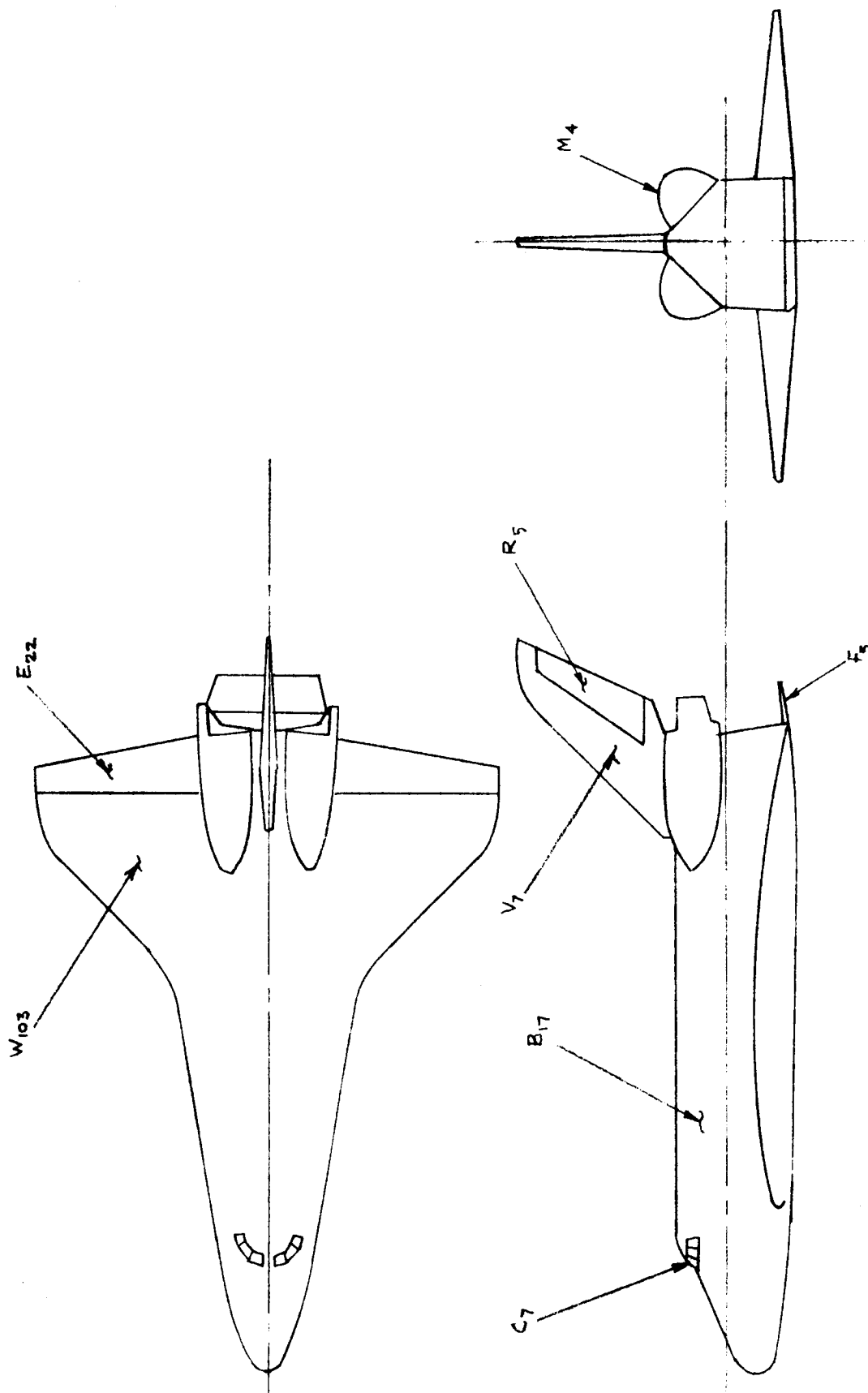
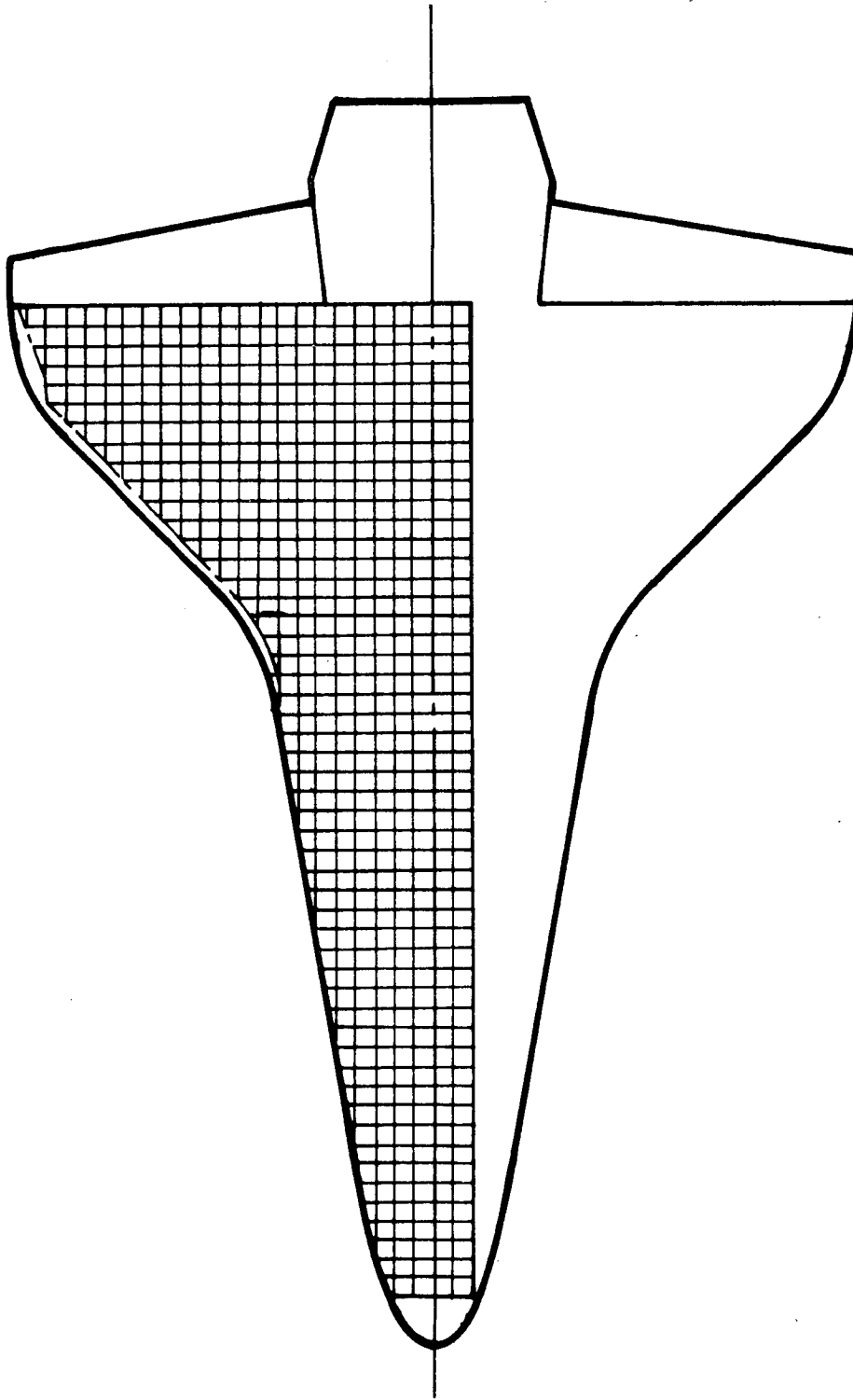
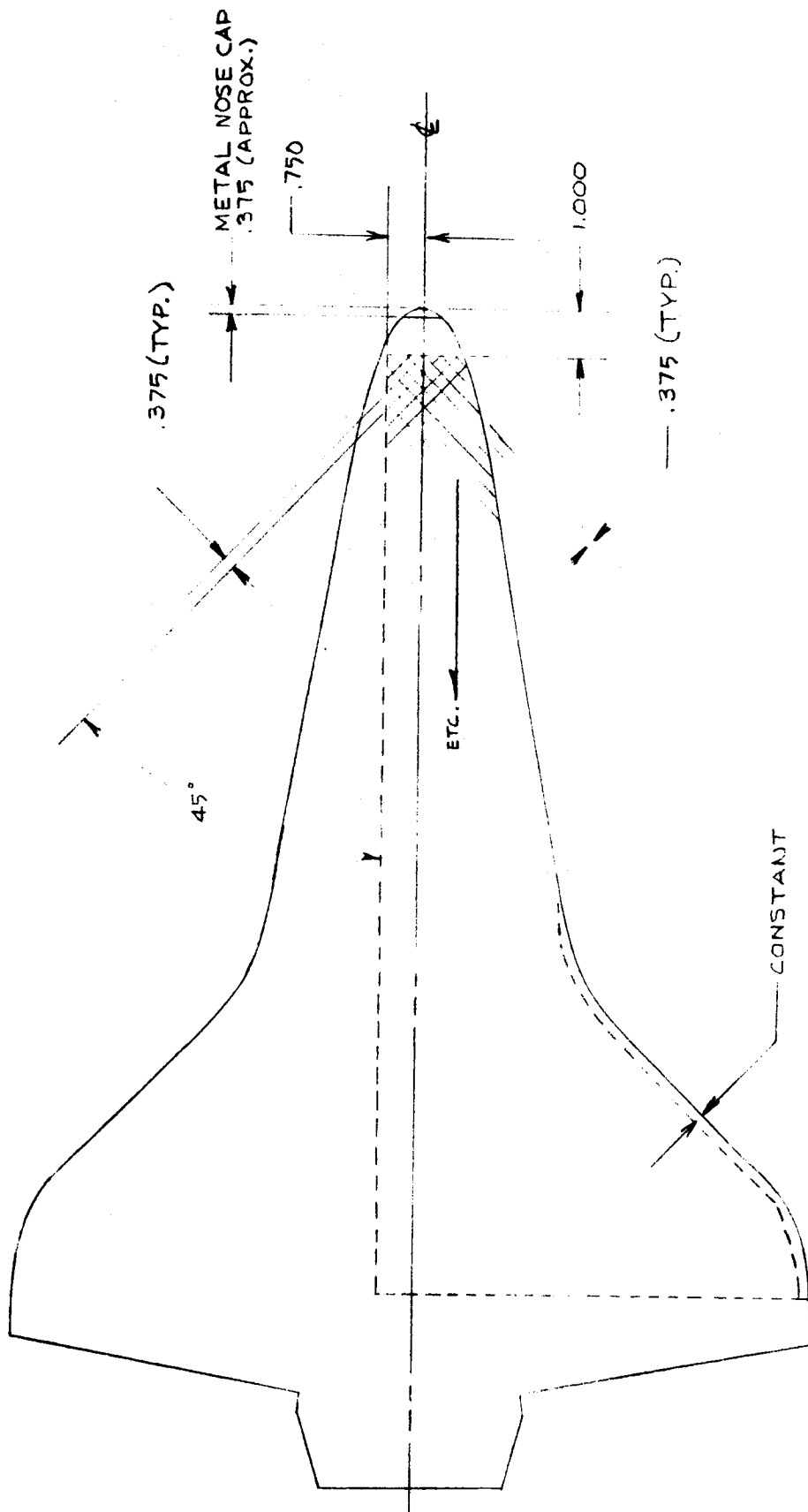


Figure 1. Orbiter 3-View.

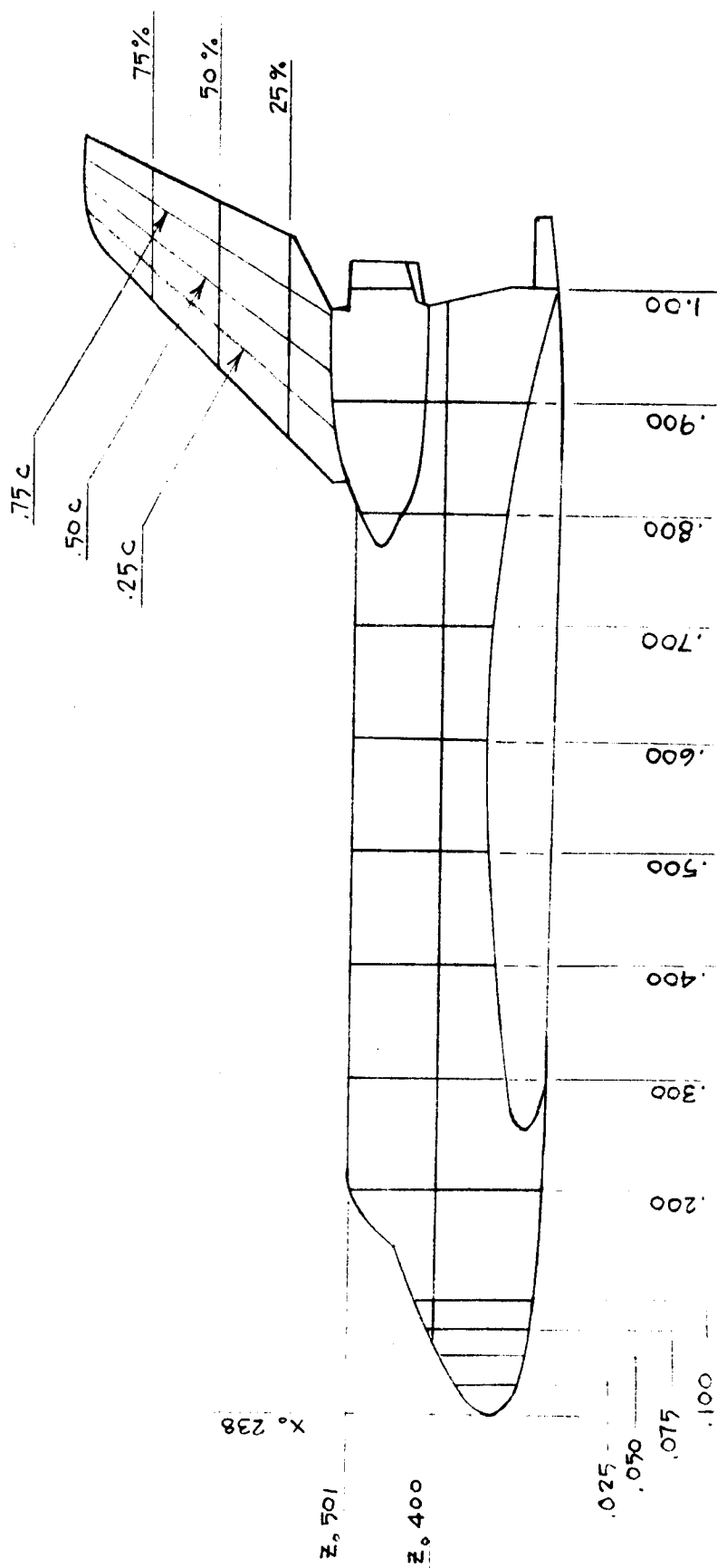


a. Rectangular Pattern  
Figure 2. - Grid patterns.



b. Diamond Pattern

Figure 2. - Concluded.



a. Side View

Figure 3. - Paint stripe pattern.

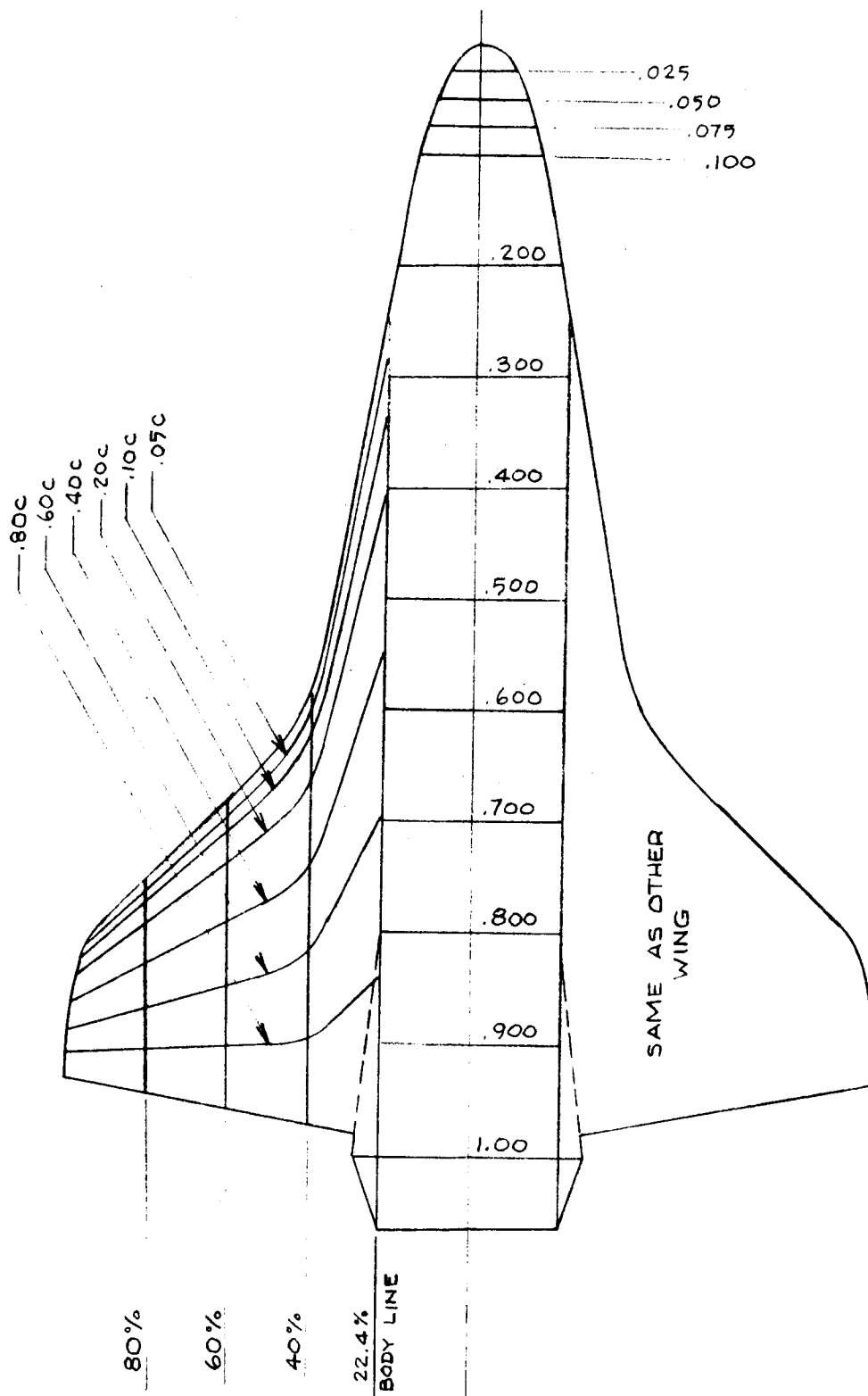
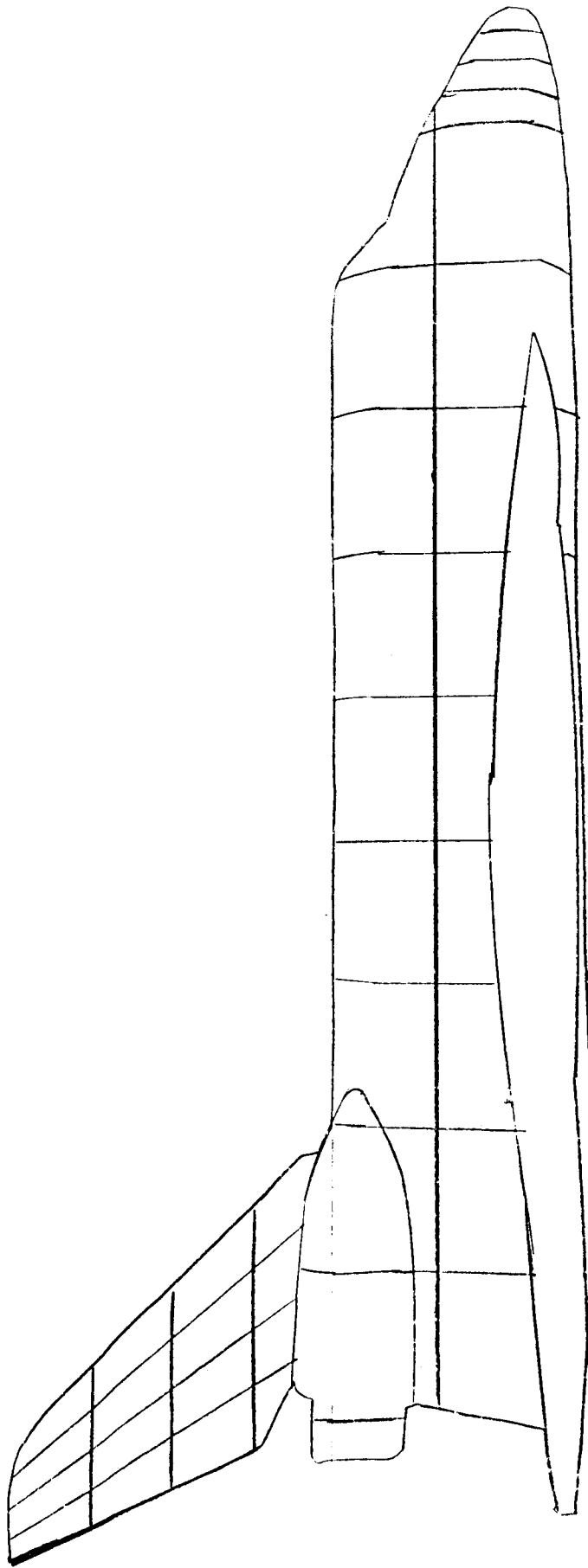
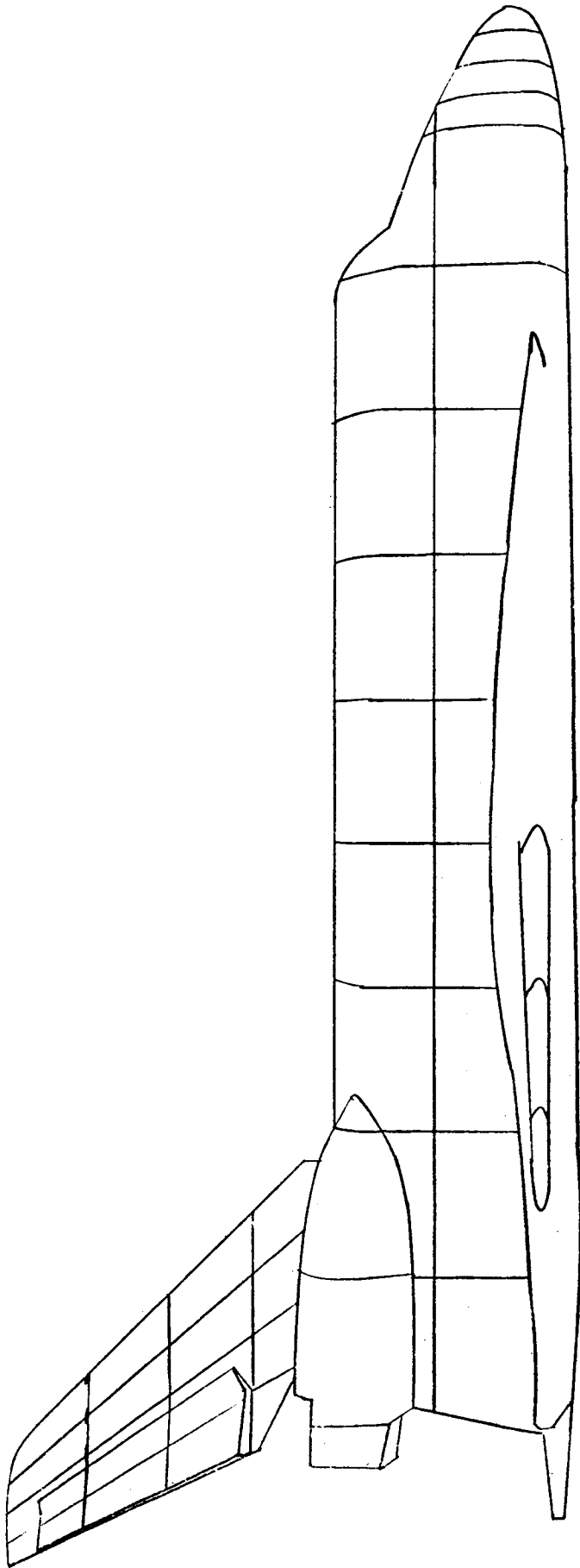


Figure 3. - Concluded.



a. Side Camera View,  $\alpha = 30^\circ$

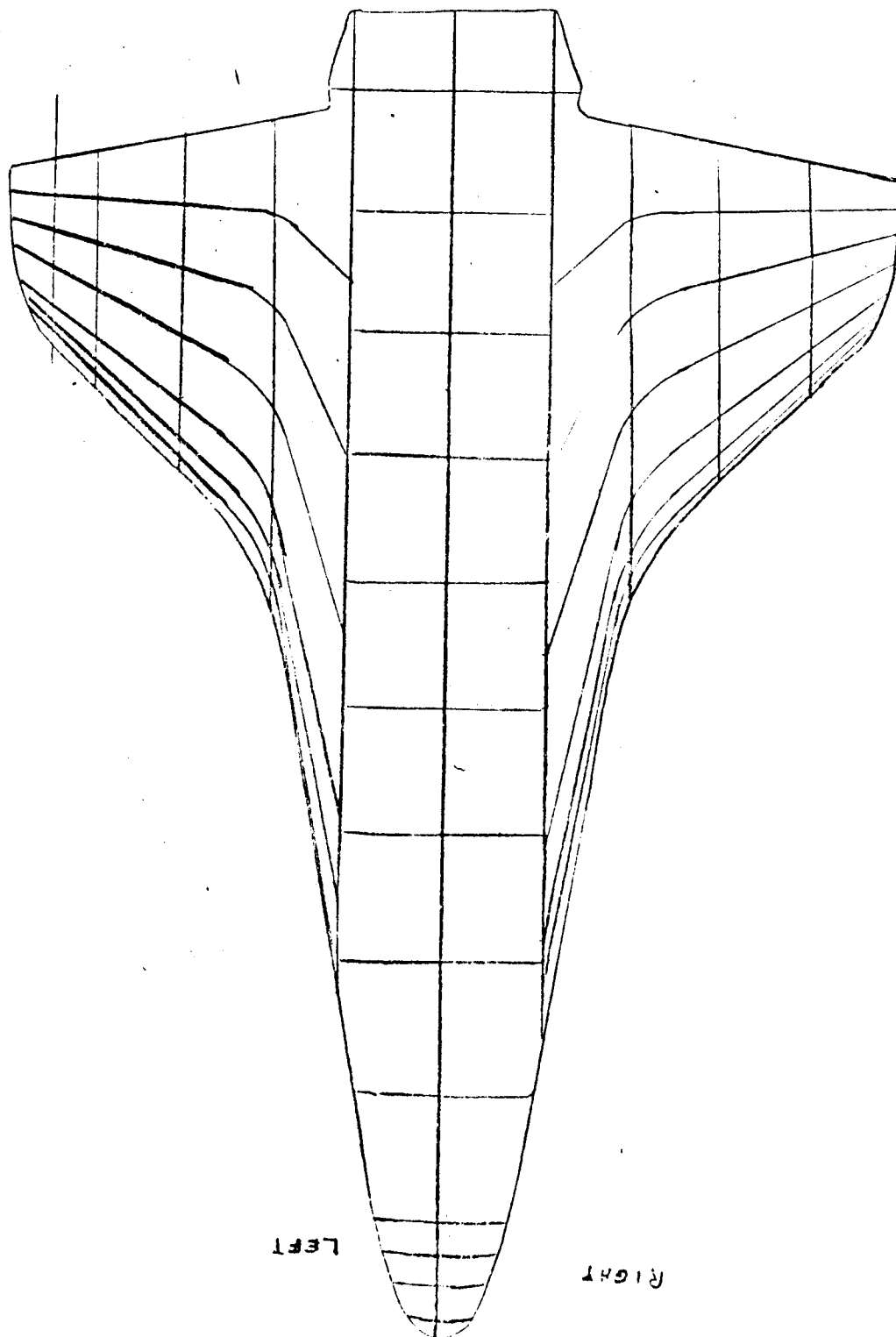
Figure 4. - Grid pattern.



b. Side Camera Grid,  $\alpha = 35^\circ$

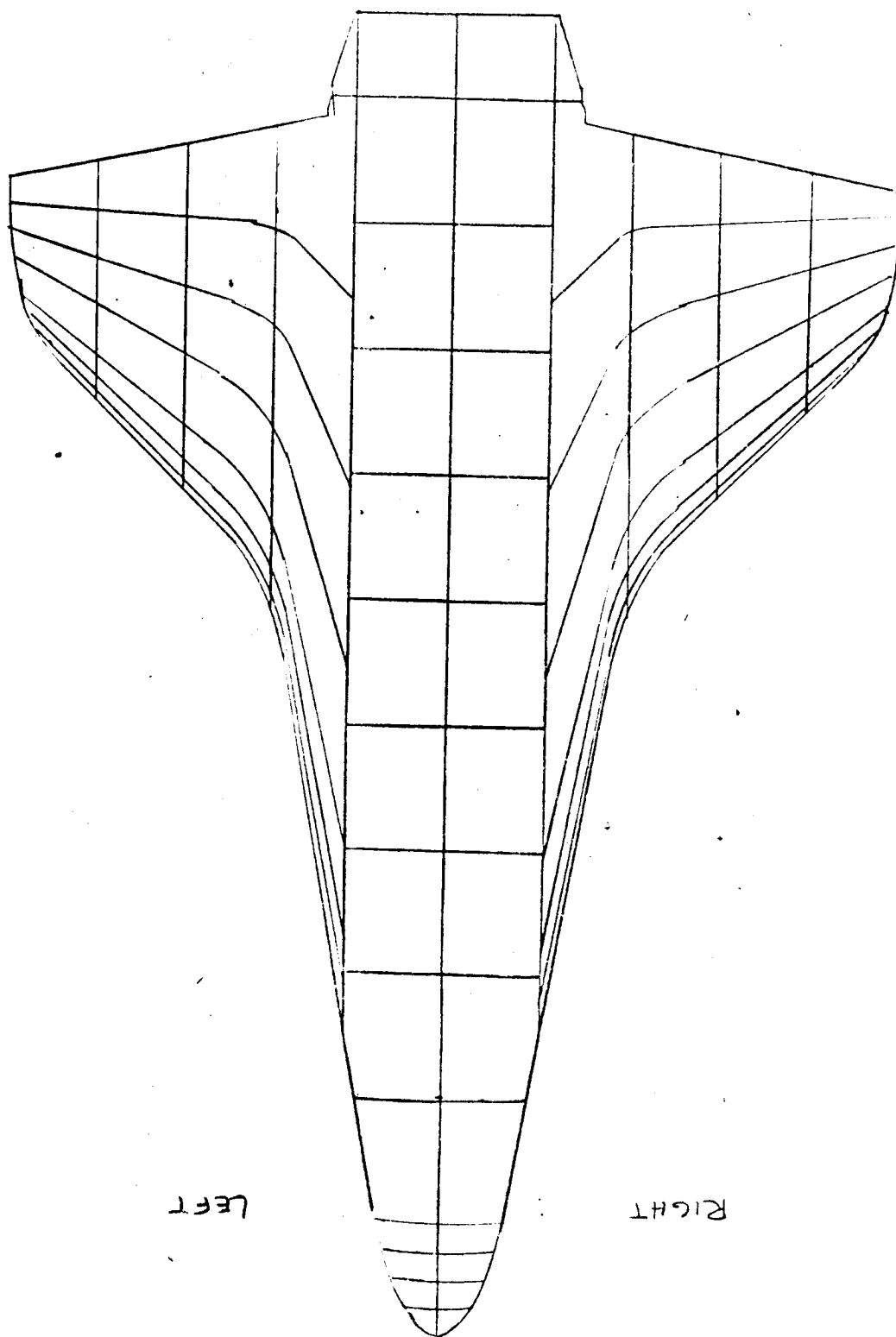
Figure 4. - Continued.





c. Top Camera Grid,  $\alpha = 30^\circ$

Figure 4. - Continued.



d. Top Camera Grid,  $\alpha = 35^\circ$

Figure 4. - Concluded.

DATA FIGURES

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 \* UNCLASSIFIED \*  
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 9/26/73

NASA-HI STS 044C  
 VA352  
 AEDCTANO, INC.) ANNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH PIPE/SONIC TUNNEL #

GROUP CONFIG MODEL MACH NO P0(P5IA) 10(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREPEND MOLL-MODEL YAM  
 1 4 UMETER H1 7.95 207.1 1275 30.00 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF WE/FT MREF SIMEF  
 (UEG H) (P5IA) (P5IA) (P5IA) (SLUGS/FT3) (SLUGS/FT3) (FT-1) (IN= .0175FT) (IN= .0175FT)  
 93.5 .022 .976 3767 1.983E-05 7.520E-06 5.923E 05 2.420E-02 4.085E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/ACAR) TRAN(TU) BETA(TU)  
 10P(T) 6515  
 SINE(S) 6653 200 79 .0519 0 0

PIC NO	TIME DELT	H(10)	M(TU)/MREF	M(-910)/MREF	H(-91210)/MREF	ST(10)
1 3000(200)	.05	MODEL HAS NOT REACHED CENTERLINE				
2 2753(200)	.05	MODEL HAS NOT REACHED CENTERLINE				
3 2754(200)	1.10	MODEL HAS NOT REACHED CENTERLINE				
1 3001(200)	1.13	MODEL HAS NOT REACHED CENTERLINE				
INJECT TIME = 2.05						
2 2755(200)	2.15	1.00	1.00E-02	.4511	1.055E-02	.4374
1 3002(200)	2.18	1.03	1.07E-02	.4455	1.042E-02	.4320
2 2756(200)	3.23	2.08	7.550E-03	.3132	7.321E-03	.3037
1 3003(200)	3.25	2.10	6.003E-03	.2490	7.274E-03	.3019
2 2757(200)	4.20	3.15	4.491E-03	.2043	5.942E-03	.2484
1 3004(200)	4.23	3.18	4.682E-03	.2025	5.918E-03	.2455
2 2758(200)	5.28	4.23	4.232E-03	.1755	5.130E-03	.2128
1 3005(200)	5.31	4.25	4.219E-03	.1750	5.115E-03	.2121
2 2759(200)	6.46	5.31	3.778E-03	.1566	4.580E-03	.1899
1 3006(200)	6.48	5.33	3.770E-03	.1563	4.570E-03	.1895
2 2760(200)	7.51	6.36	3.452E-03	.1431	4.185E-03	.1734
1 3007(200)	7.56	6.41	3.438E-03	.1425	4.168E-03	.1728
2 2761(200)	8.58	7.43	3.192E-03	.1323	3.870E-03	.1603
1 3008(200)	8.61	7.46	3.167E-03	.1320	3.864E-03	.1600
2 2762(200)	9.66	8.51	2.903E-03	.1236	3.617E-03	.1498
1 3009(200)	9.69	8.53	2.979E-03	.1234	3.611E-03	.1496
2 2763(200)	10.74	9.54	2.811E-03	.1163	3.404E-03	.1410
1 3010(200)	10.76	9.61	2.807E-03	.1163	3.403E-03	.1410
2 2764(200)	11.81	10.66	2.605E-03	.1103	3.232E-03	.1337
1 3011(200)	11.84	10.69	2.602E-03	.1101	3.227E-03	.1335
2 2765(200)	12.89	11.74	2.440E-03	.1050	3.079E-03	.1273
						.4244E-03

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9/26/73

NASA-HI STS OH4C

AEDC(AHO,INC.) AMNOLD AFS, TENNESSEE  
 YUN KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VAJ52

GROUP CONFIG MODEL MACH NO PO(P/SIA) TO(UEG N) ALPHA-MODEL ALPHA-SECTION ALPHA-PRCHEND ROLL-MODEL YAW  
 1 4 CHEITEM H1 7.95 206.7 1276 30.00 -30.00 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF HE/FI HREF S/REF  
 (UEG H) (P/SIA) (FI/SEC) (SLUGS/FI3) (LH-SLU/FI2) (FI-1) (H= .0175FI) (H= .0175FI)  
 93.6 .022 .976 3708 1.978E-05 7.533E-06 5.893E 05 2.418E-02 4.091E-02

CAMERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHU/CAR) TBAH(TU) BEIA(TU)  
 TOP(T) 6515  
 SIZE(S) 6553 200 79 .0519 1.043E-01 1.0768E-01

PIC NO	TIME	DELTIME	H(TU)	H(TU)/HREF	H(-910)	H(-910)/HREF	H(-912(U)	H(-912(TU)/HREF	ST(TU)
1	3012(200)	16.91	11.76	.1049	3.172E-03	.1312	3.076E-03	.1272	4.239E-03
2	2766(200)	13.57	12.81	.1005	3.034E-03	.1256	2.947E-03	.1218	4.058E-03
3	3013(200)	13.59	12.84	.1004	3.036E-03	.1255	2.944E-03	.1217	4.052E-03
4	2767(200)	15.04	13.89	.0964	2.919E-03	.1206	2.831E-03	.1169	3.892E-03
5	3014(200)	15.07	13.92	.0964	2.917E-03	.1205	2.828E-03	.1168	3.888E-03
6	2769(200)	16.12	14.97	.0929	2.812E-03	.1161	2.727E-03	.1126	3.746E-03
7	3015(200)	16.14	14.99	.0928	2.810E-03	.1160	2.725E-03	.1125	3.743E-03
8	2769(200)	17.19	16.04	.0897	2.716E-03	.1121	2.634E-03	.1087	3.616E-03
9	3016(200)	17.22	16.07	.0896	2.714E-03	.1120	2.632E-03	.1086	3.613E-03
10	2770(200)	18.27	17.12	.0864	2.630E-03	.1085	2.550E-03	.1052	3.498E-03
11	3017(200)	18.20	17.14	.0867	2.628E-03	.1084	2.548E-03	.1051	3.495E-03
12	2771(200)	19.25	18.20	.0842	2.549E-03	.1052	2.473E-03	.1020	3.393E-03
13	3018(200)	19.27	18.22	.0841	2.549E-03	.1051	2.472E-03	.1020	3.390E-03
14	2772(200)	20.42	19.27	.0817	2.476E-03	.1021	2.403E-03	.0990	3.290E-03
15	3019(200)	20.45	19.30	.0816	2.474E-03	.1021	2.402E-03	.0990	3.288E-03
16	2773(200)	21.50	20.35	.0795	2.412E-03	.0994	2.339E-03	.0963	3.199E-03
17	3020(200)	21.50	20.35	.0795	2.412E-03	.0994	2.339E-03	.0963	3.199E-03
18	2774(200)	22.55	21.40	.0775	2.352E-03	.0968	2.281E-03	.0939	3.116E-03
19	3021(200)	22.58	21.42	.0774	2.351E-03	.0968	2.279E-03	.0939	3.116E-03
20	2775(200)	23.63	22.47	.0756	2.295E-03	.0945	2.225E-03	.0916	3.042E-03
21	3022(200)	23.65	22.50	.0756	2.294E-03	.0945	2.224E-03	.0916	3.041E-03
22	2776(200)	24.70	23.55	.0739	2.242E-03	.0923	2.174E-03	.0895	2.972E-03
23	3023(200)	24.73	23.58	.0738	2.241E-03	.0923	2.173E-03	.0895	2.970E-03
24	2777(200)	25.76	24.63	.0722	2.192E-03	.0903	2.126E-03	.0875	2.906E-03
25	3024(200)	25.80	24.65	.0722	2.191E-03	.0902	2.125E-03	.0875	2.904E-03

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9/26/73

MASA-MI SIS OHAC

AEDC(ANO, INC.) ANNULU AFS, TENNESSEE  
 VUN-KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MALM NO PO(PSIA) TO(UEG M) ALPHA-MODEL ALPHA-SECTION ALPHA-PREPEND MOLL-MODEL YAW  
 1 4 GRETTEN H1 7.95 208.5 1277 30.00 -0.00 -30.00 180.00 .00

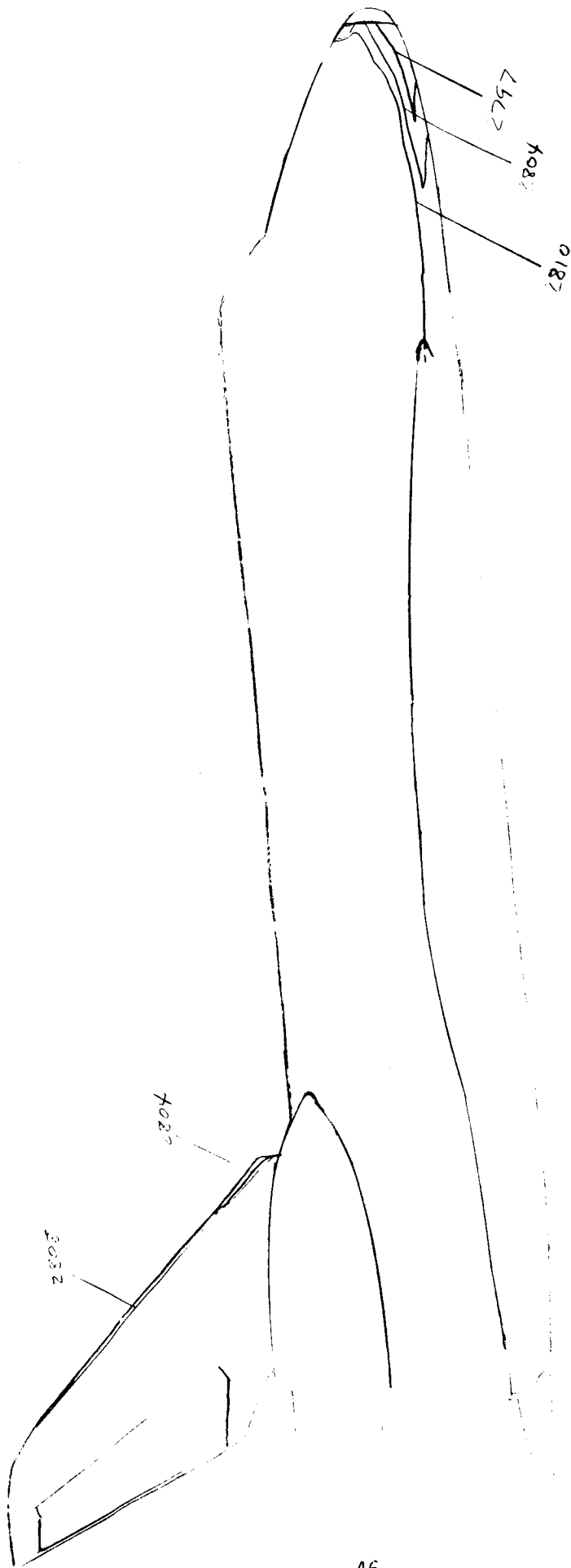
T-INF P-INF Q-INF RHO-INF MU-INF HE/FT HREF SINEF  
 (UEG M) (PSIA) (EL/SEC) (SLUGS/FT<sup>3</sup>) (LB-SL/FT<sup>2</sup>) (EL-1) (H<sub>2</sub> .0175F1) (H<sub>2</sub> .0175F1)  
 93.6 .022 .984 3769 1.994E-05 7.530E-08 5.673E 05 2.429E-02 4.075E-02

CAMERA MOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAK) TBAR(TO) BEFA(TO)  
 10P(1) 8215  
 SICE(1) 8253 200 79 .0519 1.643E-01 1.6768E-01

PIC NO	TIME DELTME	M(10)	H(10)/HREF	H(10)	M(.910)/HREF	HL .912(10)	HL .912(10)/HREF	SI(10)
1 2778(200)	26.66	25.70	1.717E-03	.0707	2.146E-03	.0884	2.081E-03	.0857
1 3025(200)	26.68	25.73	1.716E-03	.0707	2.145E-03	.0884	2.080E-03	.0857
1 2779(200)	27.53	26.74	1.662E-03	.0694	2.102E-03	.0867	2.039E-03	.0841
1 3026(200)	27.56	26.80	1.661E-03	.0693	2.101E-03	.0867	2.038E-03	.0840
1 2780(200)	27.01	27.86	1.659E-03	.0680	2.061E-03	.0850	1.999E-03	.0824
1 3027(200)	27.03	27.88	1.658E-03	.0680	2.060E-03	.0850	1.998E-03	.0824
1 2781(200)	28.08	28.93	1.618E-03	.0668	2.023E-03	.0835	1.961E-03	.0809
1 3028(200)	28.11	28.96	1.617E-03	.0667	2.022E-03	.0834	1.960E-03	.0809
1 2782(200)	31.16	30.01	1.509E-03	.0556	1.986E-03	.0820	1.926E-03	.0795
1 3029(200)	31.19	30.03	1.508E-03	.0556	1.985E-03	.0820	1.925E-03	.0795
1 2783(200)	32.24	31.08	1.561E-03	.0645	1.951E-03	.0807	1.892E-03	.0782
1 3030(200)	32.26	31.11	1.560E-03	.0645	1.951E-03	.0806	1.891E-03	.0782
1 2784(200)	33.21	32.16	1.535E-03	.0634	1.918E-03	.0793	1.860E-03	.0769
1 3031(200)	33.24	32.19	1.534E-03	.0634	1.918E-03	.0793	1.860E-03	.0769
1 2785(200)	34.29	33.24	1.510E-03	.0625	1.887E-03	.0781	1.830E-03	.0757
1 3032(200)	34.31	33.26	1.509E-03	.0624	1.886E-03	.0781	1.829E-03	.0757
1 2786(200)	35.47	34.31	1.466E-03	.0615	1.857E-03	.0768	1.801E-03	.0745
1 3033(200)	35.49	34.34	1.465E-03	.0614	1.857E-03	.0768	1.800E-03	.0745
1 2787(200)	36.24	35.39	1.463E-03	.0606	1.829E-03	.0757	1.773E-03	.0734
1 3034(200)	36.27	35.41	1.462E-03	.0606	1.828E-03	.0757	1.773E-03	.0734
1 2788(200)	37.29	36.44	1.442E-03	.0597	1.802E-03	.0747	1.748E-03	.0724
1 3035(200)	37.22	36.47	1.441E-03	.0597	1.802E-03	.0746	1.747E-03	.0723

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GP2  
6653  
cwc



GROUP 2  
6653





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NASA-RI STS OH4C  
 VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL 8

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREREND	ROLL-MODEL	YAW
2	9	OREITER R6	7.95	210.5	1278	30.00	0	-30.00	180.00	.00
T-INF	P-INF	O-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(M= .0175FT)	(M= .0175FT)			
93.7	.022	.994	3771	2.011E-05	7.546E-08	1.005E 06	2.441E-02	4.058E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCRK)	TBAR(TO)	BETA(TO)				
TOP(IT)	6515									
SIUE(S)	6653	250	81	.40535	0	0				

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(TO)
1 3036(250)	.05	MODEL HAS NOT REACHED CENTERLINE						
5 2789(250)	.05	MODEL HAS NOT REACHED CENTERLINE						
5 2790(250)	1.10	MODEL HAS NOT REACHED CENTERLINE						
1 3037(250)	1.13	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.03								
5 2791(250)	2.18	1.308E-02	.5354	1.665E-02	.6815	1.611E-02	.6592	2.138E-02
1 3038(250)	2.20	1.293E-02	.5291	1.645E-02	.6735	1.591E-02	.6513	2.113E-02
5 2792(250)	3.25	9.169E-03	.3153	1.167E-02	.4777	1.129E-02	.4620	1.499E-02
1 3039(250)	3.28	9.115E-03	.3132	1.160E-02	.4750	1.122E-02	.4594	1.490E-02
5 2793(250)	3.19	7.465E-03	.3054	9.502E-03	.3888	9.190E-03	.3760	1.219E-02
1 3040(250)	3.22	7.436E-03	.3043	9.465E-03	.3874	9.155E-03	.3747	1.215E-02
5 2794(250)	5.41	6.455E-03	.2641	8.217E-03	.3362	7.948E-03	.3252	1.055E-02
1 3041(250)	5.41	6.455E-03	.2641	8.217E-03	.3362	7.948E-03	.3252	1.055E-02
5 2795(250)	6.46	5.783E-03	.2366	7.361E-03	.3012	7.119E-03	.2913	9.446E-03
1 3042(250)	6.46	5.783E-03	.2366	7.361E-03	.3012	7.119E-03	.2913	9.446E-03
5 2796(250)	7.53	5.769E-03	.2361	7.343E-03	.3005	7.102E-03	.2906	9.424E-03
1 3043(250)	7.56	5.263E-03	.2153	6.713E-03	.2746	6.493E-03	.2656	8.611E-03
5 2797(250)	8.61	4.879E-03	.1996	6.700E-03	.2741	6.480E-03	.2651	8.594E-03
1 3044(250)	8.63	4.871E-03	.1993	6.211E-03	.2541	6.007E-03	.2457	7.967E-03
5 2798(250)	9.69	4.562E-03	.1866	6.200E-03	.2536	5.997E-03	.2453	7.953E-03
1 3045(250)	9.71	4.555E-03	.1863	5.806E-03	.2375	5.616E-03	.2297	7.448E-03
5 2799(250)	10.76	4.299E-03	.1759	5.798E-03	.2371	5.608E-03	.2293	7.434E-03
1 3046(250)	10.79	4.293E-03	.1756	5.472E-03	.2239	5.293E-03	.2165	7.019E-03
5 2800(250)	11.84	4.077E-03	.1667	5.465E-03	.2236	5.286E-03	.2162	7.010E-03
1 3047(250)	11.86	4.072E-03	.1665	5.190E-03	.2123	5.019E-03	.2053	6.654E-03
5 2801(250)	12.91	3.886E-03	.1589	5.184E-03	.2120	5.014E-03	.2050	6.646E-03
				4.947E-03	.2023	4.785E-03	.1957	6.342E-03

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NASA-RI STS 0M4C  
VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
2	9	ORBITER R6	7.95	211.2	1279	30.00	0	-30.00	180.00	.00
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R=.0175FI)	STREF (R=.0175FI)		
93.7	.023	.997	3771	2.017E-05	7.546E-08	1.008E 06	2.445E-02	4.052E-02		
CAMERA IOP(T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCK)	TBAR(1TO)	BETA(1TO)				
6515 6653		250	81	.0535	2.291E-01	2.4928E-01				

PIC NO	TIME DELTIME	H(1TO)	H(1TO)/HREF	M(.91TO)	M(.91TO)/HREF	M(.912TO)	M(.912TO)/HREF	ST(1TO)
1 3048(250)	12.54	3.882E-03	.1588	4.942E-03	.2021	4.779E-03	.1955	6.336E-03
2 2802(250)	13.59	3.720E-03	.1521	4.735E-03	.1936	4.580E-03	.1873	6.068E-03
3 3049(250)	14.02	3.716E-03	.1520	4.731E-03	.1934	4.575E-03	.1871	6.062E-03
4 2803(250)	15.07	3.573E-03	.1461	4.549E-03	.1860	4.399E-03	.1799	5.829E-03
5 3050(250)	15.09	3.570E-03	.1460	4.545E-03	.1858	4.395E-03	.1797	5.824E-03
6 2804(250)	16.14	3.443E-03	.1407	4.382E-03	.1792	4.239E-03	.1733	5.614E-03
7 3051(250)	16.17	3.440E-03	.1407	4.379E-03	.1790	4.235E-03	.1732	5.612E-03
8 2805(250)	17.22	3.326E-03	.1359	4.233E-03	.1731	4.094E-03	.1674	5.423E-03
9 3052(250)	17.24	3.323E-03	.1358	4.230E-03	.1729	4.091E-03	.1672	5.418E-03
10 2806(250)	18.30	3.220E-03	.1316	4.095E-03	.1675	3.964E-03	.1620	5.247E-03
11 3053(250)	18.32	3.217E-03	.1315	4.091E-03	.1674	3.961E-03	.1619	5.243E-03
12 2807(250)	19.37	3.123E-03	.1276	3.976E-03	.1625	3.845E-03	.1571	5.090E-03
13 3054(250)	19.40	3.121E-03	.1276	3.973E-03	.1624	3.842E-03	.1570	5.086E-03
14 2808(250)	20.45	3.035E-03	.1240	3.863E-03	.1579	3.736E-03	.1527	4.944E-03
15 3055(250)	20.47	3.033E-03	.1239	3.861E-03	.1577	3.734E-03	.1526	4.941E-03
16 2809(250)	21.52	2.954E-03	.1207	3.760E-03	.1536	3.636E-03	.1486	4.812E-03
17 3056(250)	21.55	2.952E-03	.1206	3.758E-03	.1535	3.634E-03	.1485	4.809E-03
18 2810(250)	22.60	2.879E-03	.1176	3.664E-03	.1497	3.544E-03	.1448	4.689E-03
19 3057(250)	22.63	2.877E-03	.1176	3.662E-03	.1496	3.542E-03	.1447	4.687E-03
20 2811(250)	23.68	2.809E-03	.1148	3.576E-03	.1461	3.458E-03	.1413	4.574E-03
21 3058(250)	23.70	2.808E-03	.1147	3.574E-03	.1460	3.457E-03	.1412	4.572E-03
22 2812(250)	24.73	2.746E-03	.1121	3.495E-03	.1427	3.381E-03	.1381	4.469E-03
23 3059(250)	24.78	2.743E-03	.1120	3.492E-03	.1426	3.377E-03	.1379	4.464E-03
24 2813(250)	25.80	2.685E-03	.1097	3.418E-03	.1396	3.306E-03	.1350	4.372E-03
25 3060(250)	25.85	2.683E-03	.1096	3.415E-03	.1395	3.303E-03	.1349	4.368E-03

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NASA-RI STS OH4C  
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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
2	9	ORBITER R6	7.95	211.7	1279	30.00	0	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	STREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R <sup>2</sup> -.0175FT)	(R <sup>2</sup> -.0175FT)			
93.7	.023	.999	3772	2.022E-05	7.547E-08	1.010E 06	2.448E-02	4.047E-02		
CAMERA	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(TO)	BETA(TO)				
10P(T)	6515	250	81	.0535	2.291E-01	2.4928E-01				
SIDE(S)	6653									

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
2814(250)	26.88	2.629E-03	.1074	3.346E-03	.1366	3.236E-03	.1322	4.278E-03
3061(250)	26.91	2.627E-03	.1073	3.344E-03	.1366	3.235E-03	.1321	4.276E-03
2815(250)	27.56	2.575E-03	.1052	3.278E-03	.1338	3.171E-03	.1295	4.189E-03
3062(250)	27.58	2.574E-03	.1051	3.277E-03	.1338	3.169E-03	.1294	4.189E-03
2816(250)	29.03	2.525E-03	.1031	3.214E-03	.1312	3.109E-03	.1269	4.107E-03
3063(250)	29.06	2.524E-03	.1030	3.213E-03	.1312	3.107E-03	.1268	4.104E-03
2817(250)	30.11	2.478E-03	.1011	3.154E-03	.1288	3.050E-03	.1245	4.028E-03
3064(250)	30.13	2.477E-03	.1011	3.153E-03	.1287	3.049E-03	.1245	4.029E-03
2818(250)	31.19	2.433E-03	.0993	3.097E-03	.1264	2.995E-03	.1223	3.954E-03
3065(250)	31.21	2.432E-03	.0993	3.096E-03	.1264	2.994E-03	.1222	3.954E-03
2819(250)	32.26	2.391E-03	.0976	3.043E-03	.1242	2.943E-03	.1201	3.887E-03
3066(250)	32.29	2.390E-03	.0975	3.042E-03	.1242	2.942E-03	.1201	3.885E-03
2820(250)	33.34	2.350E-03	.0959	2.992E-03	.1221	2.894E-03	.1181	3.819E-03
3067(250)	33.36	2.349E-03	.0958	2.991E-03	.1220	2.892E-03	.1180	3.813E-03
2821(250)	34.41	2.312E-03	.0943	2.943E-03	.1201	2.846E-03	.1161	3.755E-03
3068(250)	34.44	2.311E-03	.0943	2.942E-03	.1201	2.845E-03	.1161	3.756E-03
MODEL HAS LEFT CENTERLINE								
2822(250)	35.47	2.276E-03	.0929	2.898E-03	.1183	2.802E-03	.1144	3.701E-03
3069(250)	35.49	2.275E-03	.0929	2.896E-03	.1182	2.801E-03	.1143	3.698E-03



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NASA-RI STS OHAC

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
3	10	CRITTER R7	7.95	210.3	1277	30.00	0	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R <sup>2</sup> .0175F1)	(R <sup>2</sup> .0175F1)			
93.6	.022	.993	3769	7.535E-08	1.006E 06	2.439E-02	4.057E-02			
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCKK)	TBAR(TO)	BETA(TO)				
10P(T)	6515	250	79	.0535	0	0				
STUE(S)	6653									

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)
5 2823(250)	2.18	1.336E-02	.5478	1.702E-02	.6976	1.645E-02	.6746	2.188E-02
1 3072(250)	2.20	1.320E-02	.5411	1.681E-02	.6891	1.626E-02	.6663	2.161E-02
5 2826(250)	3.23	9.389E-03	.3849	1.196E-02	.4902	1.156E-02	.4740	1.538E-02
1 3073(250)	3.28	9.278E-03	.3803	1.182E-02	.4844	1.143E-02	.4684	1.520E-02
5 2827(250)	4.30	7.620E-03	.3123	9.704E-03	.3977	9.383E-03	.3846	1.247E-02
1 3074(250)	4.33	7.590E-03	.3111	9.666E-03	.3962	9.346E-03	.3831	1.242E-02
5 2828(250)	5.38	6.579E-03	.2696	8.379E-03	.3424	8.102E-03	.3321	1.077E-02
1 3075(250)	5.41	6.560E-03	.2689	8.354E-03	.3424	8.078E-03	.3311	1.074E-02
5 2829(250)	6.46	5.874E-03	.2407	7.481E-03	.3066	7.234E-03	.2965	9.616E-03
1 3076(250)	6.48	5.860E-03	.2402	7.463E-03	.3059	7.217E-03	.2958	9.594E-03
5 2830(250)	7.53	5.356E-03	.2195	6.821E-03	.2796	6.595E-03	.2703	8.768E-03
1 3077(250)	7.56	5.345E-03	.2191	6.808E-03	.2790	6.583E-03	.2698	8.751E-03
5 2831(250)	8.61	4.954E-03	.2030	6.310E-03	.2585	6.101E-03	.2500	8.107E-03
1 3078(250)	8.63	4.946E-03	.2027	6.299E-03	.2581	6.091E-03	.2496	8.094E-03
5 2832(250)	9.69	4.631E-03	.1898	5.898E-03	.2417	5.703E-03	.2337	7.579E-03
1 3079(250)	9.71	4.625E-03	.1895	5.890E-03	.2413	5.695E-03	.2333	7.564E-03
5 2833(250)	10.76	4.364E-03	.1788	5.558E-03	.2278	5.374E-03	.2202	7.142E-03
1 3080(250)	10.79	4.359E-03	.1786	5.551E-03	.2275	5.368E-03	.2199	7.133E-03
5 2834(250)	11.84	4.139E-03	.1696	5.271E-03	.2159	5.097E-03	.2088	6.769E-03
1 3081(250)	11.86	4.134E-03	.1694	5.265E-03	.2157	5.091E-03	.2086	6.761E-03
5 2835(250)	12.91	3.945E-03	.1616	5.024E-03	.2058	4.858E-03	.1990	6.449E-03

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9/26/73

NASA-RI STS OH4C

VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL ORBITER R7 MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW  
3 10 7.95 210.7 1277 30.00 0 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF RHO-INF HU-INF RE/FT MREF SIREF  
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.0175FT) (R=.0175FT)  
93.6 .022 .995 3768 2.015E-05 7.535E-08 1.008E 06 2.442E-02 4.053E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCK) TBAR(ITO) BETA(ITO)  
IOP(T) 6515 79 .0535 2.318E-01 2.5289E-01  
SIDE(S) 6653 250

PIC NO	TIME DELTIME	H(ITO)	M(ITO)/HREF	H(.910)	H1(.910)/HREF	H1(.912TO)/HREF	ST(ITO)
1 3082(250)	12.44	3.941E-03	.1614	5.019E-03	.2056	4.853E-03	6.442E-03
2 2836(250)	11.79	3.776E-03	.1546	4.809E-03	.1970	4.650E-03	6.173E-03
3 3083(250)	13.59	3.772E-03	.1545	4.804E-03	.1968	4.645E-03	6.166E-03
4 2837(250)	14.02	3.627E-03	.1485	4.619E-03	.1892	4.466E-03	5.929E-03
5 3084(250)	15.07	3.624E-03	.1484	4.615E-03	.1890	4.462E-03	5.921E-03
6 2838(250)	15.09	3.494E-03	.1432	4.450E-03	.1823	4.303E-03	5.715E-03
7 3085(250)	16.17	3.491E-03	.1430	4.446E-03	.1822	4.300E-03	5.710E-03
8 2839(250)	16.17	3.375E-03	.1382	4.299E-03	.1760	4.157E-03	5.515E-03
9 3086(250)	17.24	3.373E-03	.1381	4.295E-03	.1759	4.153E-03	5.511E-03
10 2840(250)	17.24	3.268E-03	.1338	4.161E-03	.1704	4.024E-03	5.339E-03
11 3087(250)	18.32	3.265E-03	.1337	4.158E-03	.1703	4.021E-03	5.335E-03
12 3088(250)	19.35	3.172E-03	.1299	4.039E-03	.1654	3.908E-03	5.183E-03
13 2841(250)	19.37	3.170E-03	.1298	4.037E-03	.1653	3.903E-03	5.179E-03
14 3089(250)	20.45	3.078E-03	.1261	3.922E-03	.1606	3.793E-03	5.030E-03
15 2843(250)	20.47	2.999E-03	.1260	3.920E-03	.1605	3.790E-03	5.027E-03
16 3090(250)	21.52	2.997E-03	.1228	3.820E-03	.1563	3.694E-03	4.899E-03
17 2844(250)	21.52	2.923E-03	.1197	3.817E-03	.1563	3.691E-03	4.896E-03
18 3091(250)	22.60	2.921E-03	.1196	3.723E-03	.1524	3.600E-03	4.774E-03
19 2845(250)	23.65	2.852E-03	.1168	3.720E-03	.1523	3.598E-03	4.771E-03
20 3092(250)	23.69	2.851E-03	.1167	3.633E-03	.1487	3.512E-03	4.658E-03
21 2846(250)	24.73	2.786E-03	.1141	3.549E-03	.1486	3.511E-03	4.654E-03
22 3093(250)	24.75	2.785E-03	.1140	3.547E-03	.1453	3.431E-03	4.551E-03
23 2847(250)	25.80	2.725E-03	.1115	3.470E-03	.1452	3.430E-03	4.548E-03
24 3094(250)	25.83	2.724E-03	.1115	3.469E-03	.1420	3.356E-03	4.448E-03
25 2848(250)	26.88	2.724E-03	.1115	3.469E-03	.1420	3.354E-03	4.446E-03

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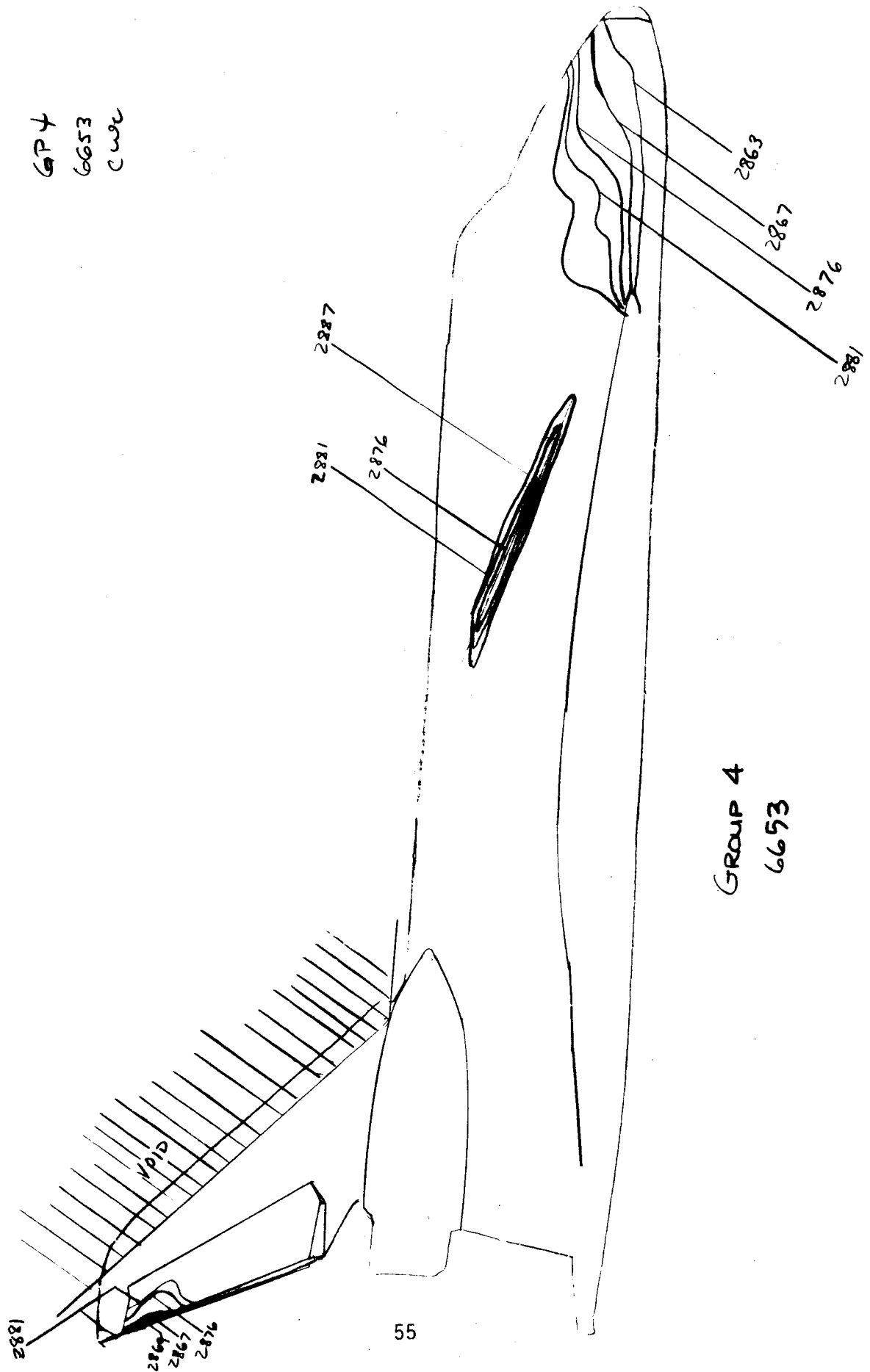
NASA-R1 STS 044C  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
3	10	ORBITER R7	7.95	211.0	1277	30.00	0	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MREF	SIREF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(R= .0175FT)		
93.6	.023	.996	3768	2.018E-05	7.535E-08	1.009E 06	2.443E-02	4.050E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCKX)	TBAR(TO)	BETA(TO)				
TOP(T)	6515									
SIDE(S)	6653	250	79	.0535	2.318E-01	2.5289E-01				

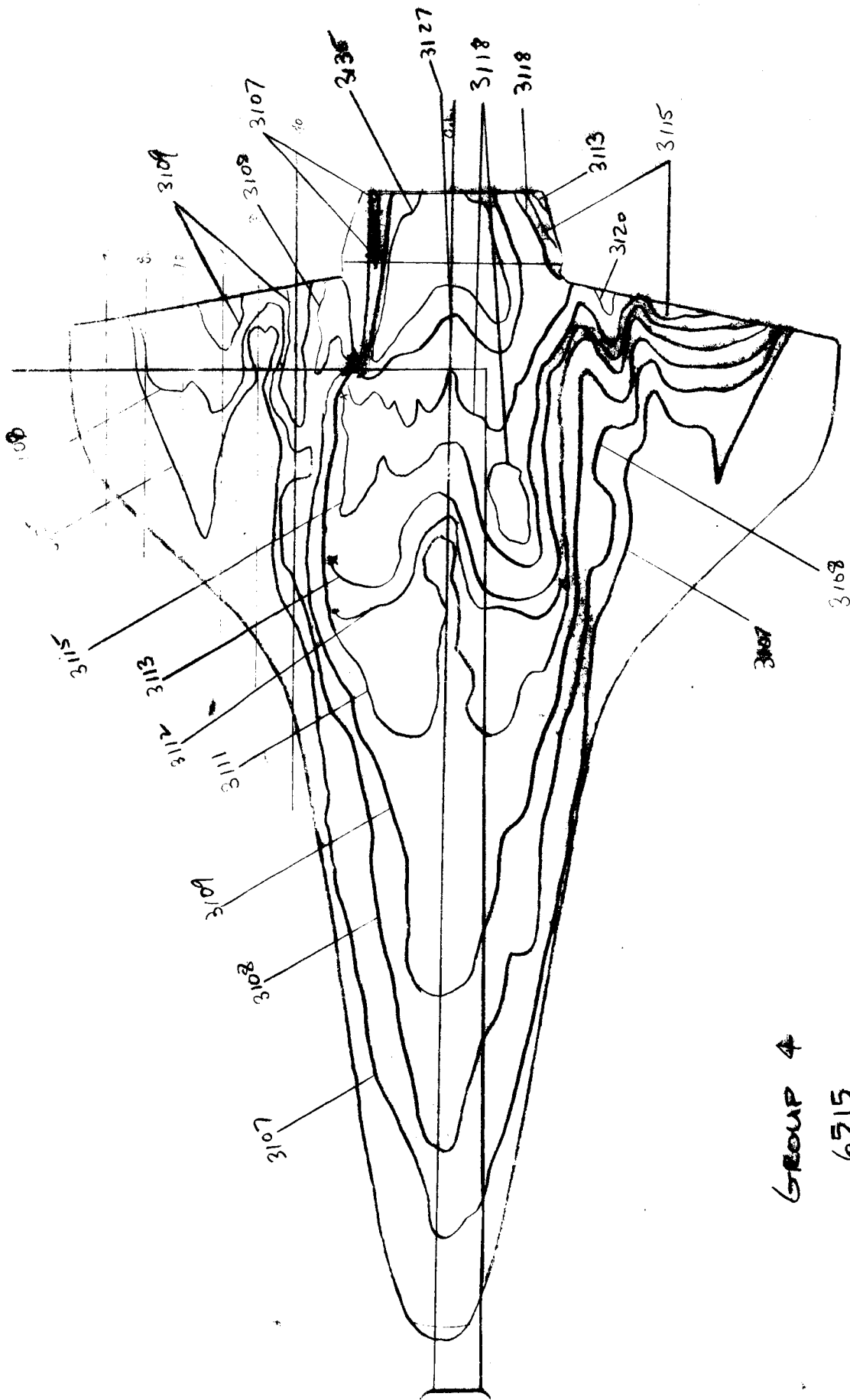
PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
2849(250)	26.88	25.73	2.667E-03	.1092	3.397E-03	.1390	3.285E-03	.1344	4.354E-03
3095(250)	26.91	25.75	2.666E-03	.1091	3.395E-03	.1390	3.283E-03	.1344	4.352E-03
2849(250)	27.56	26.80	2.613E-03	.1070	3.328E-03	.1362	3.218E-03	.1317	4.266E-03
3096(250)	27.98	26.83	2.612E-03	.1069	3.327E-03	.1361	3.217E-03	.1316	4.264E-03
2850(250)	29.03	27.88	2.562E-03	.1048	3.263E-03	.1335	3.155E-03	.1291	4.181E-03
3097(250)	29.06	27.91	2.561E-03	.1048	3.262E-03	.1335	3.154E-03	.1291	4.179E-03
2851(250)	30.11	28.96	2.514E-03	.1029	3.202E-03	.1311	3.096E-03	.1267	4.104E-03
3098(250)	30.13	28.98	2.513E-03	.1029	3.201E-03	.1310	3.095E-03	.1267	4.102E-03
2852(250)	31.19	30.03	2.469E-03	.1010	3.144E-03	.1287	3.040E-03	.1244	4.028E-03
3099(250)	31.21	30.06	2.468E-03	.1010	3.143E-03	.1286	3.039E-03	.1243	4.027E-03
2853(250)	32.26	31.11	2.426E-03	.0993	3.089E-03	.1264	2.987E-03	.1222	3.958E-03
3100(250)	32.29	31.13	2.425E-03	.0992	3.088E-03	.1264	2.986E-03	.1222	3.956E-03
2854(250)	33.34	32.19	2.385E-03	.0976	3.037E-03	.1243	2.937E-03	.1202	3.891E-03
3101(250)	33.36	32.21	2.384E-03	.0975	3.036E-03	.1242	2.936E-03	.1201	3.890E-03
2855(250)	34.41	33.26	2.346E-03	.0960	2.988E-03	.1223	2.889E-03	.1182	3.827E-03
3102(250)	34.44	33.29	2.345E-03	.0960	2.986E-03	.1222	2.888E-03	.1182	3.826E-03
MODEL HAS LEFT CENTERLINE									
2856(250)	35.37	34.34	2.309E-03	.0945	2.940E-03	.1203	2.843E-03	.1163	3.767E-03
3103(250)	35.52	34.36	2.308E-03	.0944	2.939E-03	.1203	2.842E-03	.1163	3.766E-03

GP 4  
6653  
CWC



GROUP 4  
6653





GROUP 4  
6515

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9/26/73

NASA-HI STS UM4C AEDC(HQ+INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) T(DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND ROLL-MODEL YAW  
 4 4 UNCLIFFER H1 7.95 209.0 1275 29.99 .01 -50.00 180.00 .00

T-INF P-INF U-INF V-INF RMO-INF MU-INF HE/FT MHEF SIMEF  
 (DEG R) (PSIA) (F/SLC) (SLUGS/FT3) (LBS/SL/FT2) (F/FT) (H=.0175F) (H=.0175F)  
 93.5 .022 .987 37.7 2.001E-05 7.526E-08 1.001E 06 2.431E-02 9.067E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/CAK) TBAH(TO) HETA(TO)

10P(1) 6-15  
 S10E(S) 6c53 131 80 .0486 0 0

PIC NO TIME DELINE H(10) H(TO)/HREF H(.910) M(.910)/MREF H(.91210) M(.91210)/MREF S(TO)

2 2857(131) 3.65 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3104(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2858(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3105(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2859(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3106(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3107(131) 3.65 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03

INJECT TIME = 2.40

2 2860(131) 3.65 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3108(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3109(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2861(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3110(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3111(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2862(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3112(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3113(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2863(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3114(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2864(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3115(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2865(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3116(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2866(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3117(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2867(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3118(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2868(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3119(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 2869(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03  
 1 3120(131) 3.68 1.90 2.290E-03 .0941 2.804E-03 .1152 2.727E-03 .1121 3.792E-03

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NASA-HI STS 0140  
AECIARU, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H  
VA352

GROUP	CONFIG	MODEL	MACH NO	P0(P(SIA)	I0(UEG H)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREPEND	ROLL-MODEL	YAW		
4	4	0HE11EK H	7.95	209.7	1276	29.99	.01	-30.00	180.00	.00		
<hr/>												
I-INF	P-INF	Q-INF	V-INF	HNO-INF	MO-INF	ME/FI	HREF	SIMEF				
(UEG H)	(PSIA)	(PIZEC)	(PIZEC)	(SLUGS/EI3)	(LR=SEC/EI2)	(EI=1)	(R=-.0175FI)	(R=-.0175FI)				
93.5	.022	.990	3767	2.007E+05	7.529E-08	1.004E+06	2.435E-02	4.0061E-02				
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CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUACAK)	TBAR(TO)	BETA(TO)						
10(FII)	6215											
SIDE(S)	6653	1J1	R0	.0486	6.933E-02	6.5031E-02						

PIC NO.	TIME	DELTIME	H(10)	H(TO)/HREF	H(.910)	M(.910)/HREF	M(.912[U)	H(.912TO)/HREF	ST(10)
1	3110(131)	12.54	9.283E-04	.0381	1.137E-03	.0467	1.106E-03	.0454	1.534E-03
2	2870(131)	13.59	8.869E-04	.0365	1.088E-03	.0447	1.059E-03	.0435	1.469E-03
1	3117(131)	14.02	8.860E-04	.0365	1.057E-03	.0446	1.052E-03	.0434	1.467E-03
2	2871(131)	15.17	8.533E-04	.0350	1.045E-03	.0429	1.016E-03	.0417	1.409E-03
1	3118(131)	15.59	8.525E-04	.0350	1.044E-03	.0428	1.015E-03	.0417	1.408E-03
2	2872(131)	16.14	8.217E-04	.0337	1.006E-03	.0413	9.796E-04	.0402	1.357E-03
1	3119(131)	16.17	8.210E-04	.0337	1.005E-03	.0413	9.777E-04	.0401	1.356E-03
2	2873(131)	17.62	7.933E-04	.0326	9.713E-04	.0399	9.448E-04	.0388	1.310E-03
1	3120(131)	17.64	7.927E-04	.0325	9.706E-04	.0398	9.441E-04	.0388	1.309E-03
2	2874(131)	18.50	7.577E-04	.0315	9.500E-04	.0386	9.153E-04	.0375	1.267E-03
1	3121(131)	18.52	7.672E-04	.0315	9.393E-04	.0385	9.136E-04	.0375	1.266E-03
2	2875(131)	19.37	7.445E-04	.0305	9.115E-04	.0374	8.866E-04	.0364	1.229E-03
1	3122(131)	19.40	7.439E-04	.0305	9.109E-04	.0374	8.860E-04	.0364	1.228E-03
2	2876(131)	20.45	7.232E-04	.0297	8.954E-04	.0363	8.613E-04	.0353	1.193E-03
1	3123(131)	20.47	7.227E-04	.0296	8.949E-04	.0363	8.607E-04	.0353	1.192E-03
2	2877(131)	21.52	7.046E-04	.0289	8.515E-04	.0353	8.380E-04	.0344	1.151E-03
1	3124(131)	21.55	7.032E-04	.0289	8.510E-04	.0353	8.375E-04	.0344	1.150E-03
2	2878(131)	22.50	6.836E-04	.0281	8.394E-04	.0344	8.165E-04	.0335	1.131E-03
1	3125(131)	22.53	6.832E-04	.0281	8.389E-04	.0344	8.160E-04	.0335	1.131E-03
2	2879(131)	23.68	6.609E-04	.0274	8.129E-04	.0336	7.956E-04	.0327	1.103E-03
1	3126(131)	23.70	6.605E-04	.0274	8.125E-04	.0336	7.951E-04	.0327	1.103E-03
2	2880(131)	24.75	6.533E-04	.0268	7.959E-04	.0328	7.780E-04	.0319	1.078E-03
1	3127(131)	24.78	6.529E-04	.0268	7.944E-04	.0328	7.767E-04	.0319	1.078E-03
2	2881(131)	25.83	6.368E-04	.0262	7.821E-04	.0321	7.607E-04	.0312	1.054E-03
1	3128(131)	25.85	6.364E-04	.0262	7.817E-04	.0321	7.603E-04	.0312	1.053E-03

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9/26/73

NASA-MI SITS OHAC  
 AEDCTAWO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VJ352

GROUP CONFIG MODEL MACH NO PO(P(S)A) TO(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
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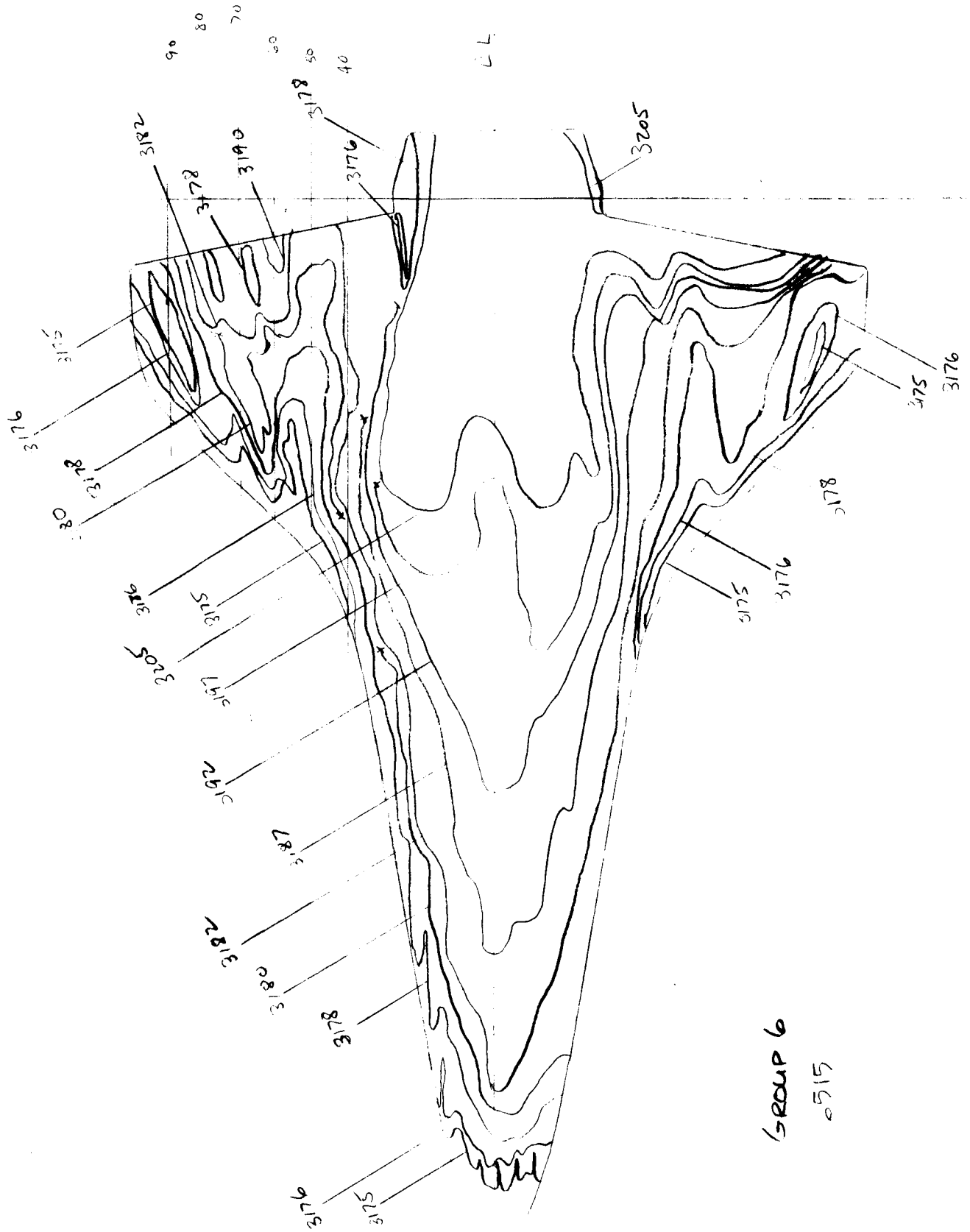
T-INF P-INF U-INF V-INF MU-INF HU-INF RE/P T HREF SIREF  
 (UEG H) (PSIA) (PSIA) (PSIA) (LBS/SEC) (LBS/SEC/FT) (FI-1) (H= .0175FI) (H= .0175FI)  
 93.5 .022 .992 3707 2.011E-05 7.529E-08 1.006E 06 2.438E-02 9.057E-02

CAMERA HULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MMXACAR) TBAN(TO) RE(TAU)  
 TOP(1) 6515  
 SIDE(5) 6653 131 80 .0486 6.933E-02 6.5031E-02

PIC NO	TIME DELTIME	M(10)	M(10)/MREF	M(910)	M(.910)/MREF	M(.91210)	M(.91210)/MREF	SI(10)
2882(131)	26.91	6.252E-04	.0256	7.654E-04	.0314	7.444E-04	.0305	1.031E-03
3129(131)	26.93	6.259E-04	.0256	7.651E-04	.0314	7.442E-04	.0305	1.030E-03
2883(131)	27.08	6.124E-04	.0251	7.498E-04	.0308	7.293E-04	.0299	1.010E-03
3130(131)	28.01	6.121E-04	.0251	7.495E-04	.0307	7.290E-04	.0299	1.009E-03
2884(131)	29.06	6.004E-04	.0246	7.351E-04	.0301	7.150E-04	.0293	9.849E-04
3131(131)	29.08	6.001E-04	.0246	7.348E-04	.0301	7.147E-04	.0293	9.845E-04
2885(131)	30.11	5.893E-04	.0242	7.216E-04	.0296	7.019E-04	.0288	9.717E-04
3132(131)	30.13	5.891E-04	.0242	7.212E-04	.0296	7.015E-04	.0288	9.708E-04
2886(131)	31.09	5.786E-04	.0237	7.084E-04	.0290	6.891E-04	.0283	9.535E-04
3133(131)	31.01	5.784E-04	.0237	7.081E-04	.0290	6.888E-04	.0282	9.531E-04
2887(131)	32.06	5.604E-04	.0233	6.960E-04	.0285	6.770E-04	.0278	9.368E-04
3134(131)	32.09	5.602E-04	.0233	6.957E-04	.0285	6.767E-04	.0277	9.363E-04
2888(131)	33.04	5.508E-04	.0229	6.842E-04	.0280	6.655E-04	.0273	9.205E-04
3135(131)	33.06	5.506E-04	.0229	6.839E-04	.0280	6.652E-04	.0273	9.205E-04
2889(131)	34.01	5.496E-04	.0225	6.729E-04	.0276	6.546E-04	.0268	9.058E-04
3136(131)	34.04	5.494E-04	.0225	6.727E-04	.0276	6.543E-04	.0268	9.054E-04
35029								
2890(131)	35.09	5.409E-04	.0222	6.623E-04	.0272	6.442E-04	.0264	8.914E-04
3137(131)	35.52	5.407E-04	.0222	6.620E-04	.0271	6.439E-04	.0264	8.911E-04

MODEL HAS LEFT CENTERLINE

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 \* UNCLASSIFIED \*  
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GROUP 6

0515

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 \* UNCLASSIFIED \*  
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9/26/73

NASA-MI SYS OHAC

AEDC(AHO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH PIPESONIC TUNNEL H

VA352

GROUP COMFIG MODEL MACH NO POPSIA) (U) (U) (U) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 6 10 CHEITEM H7 7.95 209.0 1285 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF HMO-INF MU-INF HE/FI HREF S(REF  
 (UEG H) (PSIA) (PSIA) (PSIA) (SLUGS/FT) (FT) (FT) (H= .0175EI) (H= .0175EI)  
 94.2 .022 .987 3780 1.987E-05 7.582E-04 5.906E 05 2.434E-02 4.085E-02

CAMERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MM/ACAK) TBAH(TU) BEIA(TU)  
 104(1) 6515  
 516(15) 6653 175 80 .0509 0 0

PIC NO) TIME DELTIME H(TU) H(TU)/HREF H(.910) H(.910)/HREF H(.91210) H(.91210)/HREF ST(10)  
 1 3172(175) .05 MODEL HAS NOT REACHED CENTERLINE  
 2 2925(175) .05 MODEL HAS NOT REACHED CENTERLINE  
 3 3173(175) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 4 2928(175) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 5 3174(175) 2.18 MODEL HAS NOT REACHED CENTERLINE  
 6 2927(175) 2.18 MODEL HAS NOT REACHED CENTERLINE  
 INJECT TIME = 2.40

1	3172(175)	3.43	1.88	4.675E-03	.1921	5.768E-03	.2379	5.622E-03	.2310	7.763E-03
2	2925(175)	3.45	1.90	4.644E-03	.1904	5.749E-03	.2362	5.585E-03	.2295	7.708E-03
3	3173(175)	4.20	2.96	3.728E-03	.1532	4.615E-03	.1897	4.538E-03	.1843	6.191E-03
4	2928(175)	4.23	2.98	3.712E-03	.1525	4.596E-03	.1888	4.564E-03	.1834	6.162E-03
5	3174(175)	5.38	4.03	3.192E-03	.1312	3.952E-03	.1624	3.839E-03	.1578	5.301E-03
6	2927(175)	5.41	4.06	3.182E-03	.1307	3.934E-03	.1619	3.827E-03	.1572	5.282E-03
7	3172(175)	6.46	5.11	2.836E-03	.1165	3.511E-03	.1443	3.410E-03	.1402	4.709E-03
8	2925(175)	6.48	5.13	2.829E-03	.1163	3.502E-03	.1439	3.402E-03	.1398	4.698E-03
9	3173(175)	7.53	6.18	2.571E-03	.1029	3.191E-03	.1311	3.099E-03	.1273	4.278E-03
10	2928(175)	7.56	6.21	2.572E-03	.1027	3.184E-03	.1308	3.093E-03	.1271	4.269E-03
11	3174(175)	8.61	7.26	2.378E-03	.0977	2.945E-03	.1210	2.861E-03	.1175	3.948E-03
12	2927(175)	8.63	7.29	2.374E-03	.0976	2.940E-03	.1204	2.856E-03	.1173	3.942E-03
13	3172(175)	9.69	8.34	2.220E-03	.0912	2.748E-03	.1129	2.670E-03	.1097	3.686E-03
14	2925(175)	9.71	8.36	2.216E-03	.0911	2.744E-03	.1127	2.666E-03	.1095	3.679E-03
15	3173(175)	10.76	9.41	2.063E-03	.0838	2.580E-03	.1062	2.512E-03	.1032	3.466E-03
16	2928(175)	10.79	9.44	2.066E-03	.0837	2.583E-03	.1061	2.509E-03	.1031	3.463E-03
17	3174(175)	11.84	10.44	1.979E-03	.0813	2.450E-03	.1007	2.380E-03	.0978	3.285E-03
18	2927(175)	11.86	10.51	1.976E-03	.0812	2.447E-03	.1006	2.377E-03	.0977	3.283E-03
19	3172(175)	12.91	11.57	1.845E-03	.0774	2.333E-03	.0959	2.266E-03	.0931	3.128E-03

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4126173

NASA-HI STS 0H4C

WA352

AEUC(AHU,INC.) AMNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFID	MODEL	MACH NO	POSTAL	TO (DEG M)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAM
6	10	UNELTEM H7	7.95	208.9	1285	29.99	.01	-30.00	190.00	.00

I-INF	P-INF	U-INF	V-INF	RMJ-INF	MU-INF	WE/FT	HR/EF	S/REF
WE/EF	(P2)IA	(P2)IA	(E1)ZSC	(SLRGS/E13)	(LR=ZSC/E12)	(E1=1)	(HR=	(M=
94.2	0.22	0.06	3700	1.986E-05	7.583E-08	5.900E 05	2.434E-02	4.086E-02

AMPLER	MULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (MHUACAK)	TBAR(TO)	BETA(TO)
OP(T)	6515					
IDE(S)	6653	1/5	80	0.0509	1.276E-01	1.2549E-01

PIC NO	LINE	DELTIME	M(10)	M(10)/MREF	M(.910)	M(.91210)	M(.91210)/MREF	ST(10)
3184(1175)	12.54	11.59	1.862E-03	.0713	2.331E-03	2.264E-03	.0930	3.125E-03
2938(1175)	13.59	12.64	1.863E-03	.0741	2.232E-03	2.198E-03	.0891	2.992E-03
3185(1175)	14.02	12.67	1.861E-03	.0740	2.230E-03	2.166E-03	.0890	2.989E-03
2543(1175)	15.07	13.72	1.730E-03	.0711	2.142E-03	2.081E-03	.0855	2.873E-03
3186(1175)	15.09	13.74	1.729E-03	.0710	2.140E-03	2.079E-03	.0854	2.871E-03
2940(1175)	16.14	14.74	1.606E-03	.0685	2.063E-03	2.004E-03	.0823	2.766E-03
3187(1175)	16.17	14.82	1.605E-03	.0684	2.061E-03	2.002E-03	.0823	2.764E-03
2941(1175)	17.02	15.87	1.609E-03	.0661	1.992E-03	1.935E-03	.0795	2.671E-03
3188(1175)	17.04	15.90	1.607E-03	.0660	1.990E-03	1.933E-03	.0794	2.669E-03
3189(1175)	18.10	16.95	1.551E-03	.0640	1.928E-03	1.872E-03	.0769	2.585E-03
2942(1175)	18.50	16.95	1.551E-03	.0640	1.928E-03	1.872E-03	.0769	2.585E-03
3190(1175)	19.37	18.02	1.510E-03	.0620	1.869E-03	1.816E-03	.0746	2.506E-03
2943(1175)	19.37	18.02	1.510E-03	.0620	1.869E-03	1.816E-03	.0746	2.506E-03
3191(1175)	20.45	19.10	1.468E-03	.0603	1.816E-03	1.764E-03	.0725	2.436E-03
2944(1175)	20.45	19.10	1.468E-03	.0603	1.816E-03	1.764E-03	.0725	2.436E-03
2945(1175)	21.52	20.18	1.421E-03	.0588	1.761E-03	1.716E-03	.0705	2.370E-03
3192(1175)	21.55	20.20	1.420E-03	.0586	1.760E-03	1.715E-03	.0705	2.367E-03
3193(1175)	22.60	21.25	1.390E-03	.0571	1.721E-03	1.672E-03	.0687	2.308E-03
2946(1175)	22.60	21.25	1.390E-03	.0571	1.721E-03	1.672E-03	.0687	2.308E-03
3194(1175)	23.68	22.33	1.356E-03	.0557	1.679E-03	1.631E-03	.0670	2.253E-03
2947(1175)	23.68	22.33	1.356E-03	.0557	1.679E-03	1.631E-03	.0670	2.253E-03
3195(1175)	24.15	21.40	1.325E-03	.0544	1.640E-03	1.593E-03	.0655	2.200E-03
2948(1175)	24.15	21.40	1.325E-03	.0544	1.640E-03	1.593E-03	.0655	2.200E-03
3196(1175)	25.63	24.48	1.295E-03	.0532	1.604E-03	1.558E-03	.0640	2.151E-03
2949(1175)	25.63	24.48	1.295E-03	.0532	1.604E-03	1.558E-03	.0640	2.151E-03

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5/26/73

NASA-WI SIS OMAC

VA352

AEDC(AH-0, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFID MACH NO P0(PSTA) T0(DEL R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 6 10 UNCLIFEM H7 7.95 208.9 1285 29.99 .01 -30.00 180.00 .00

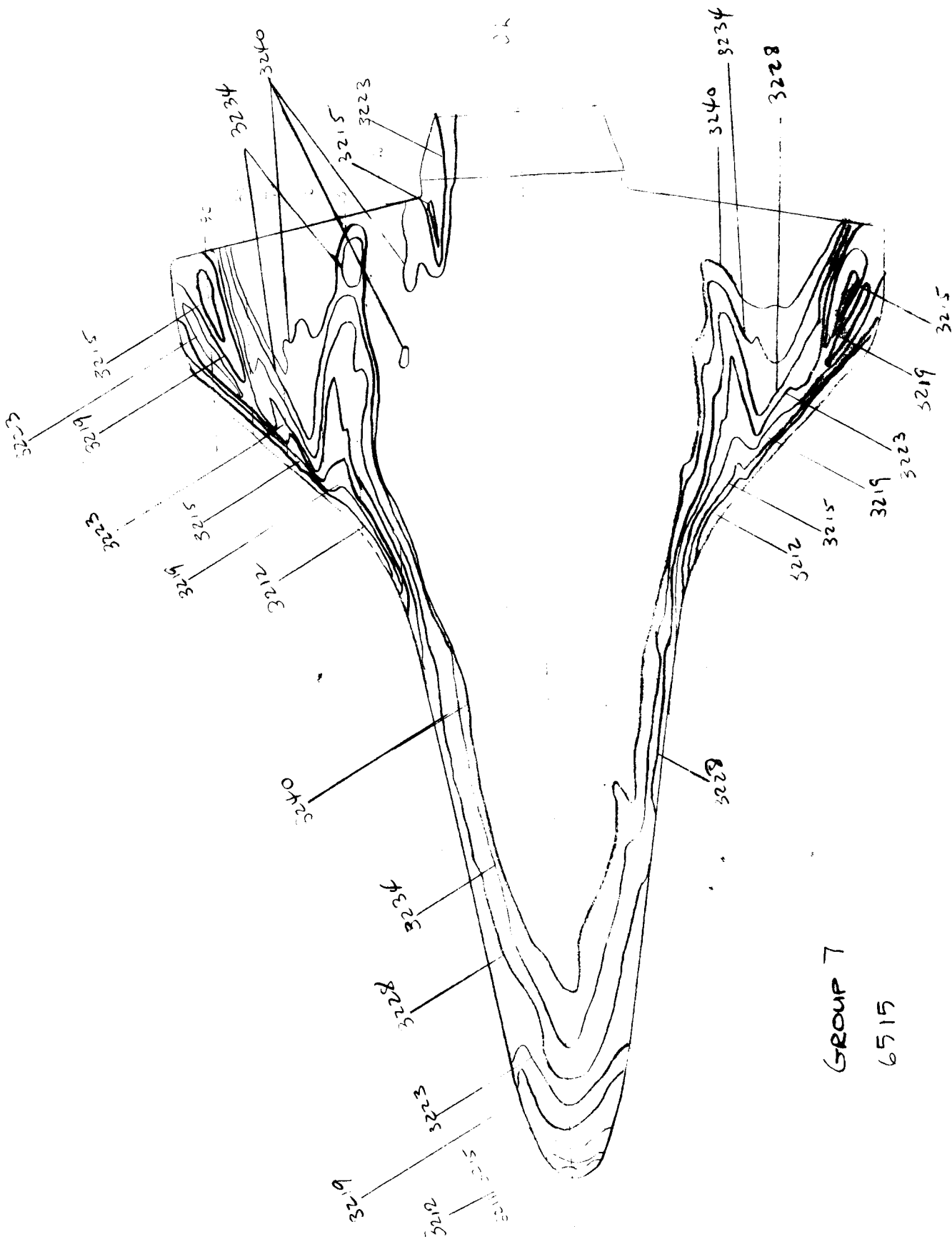
T-INF P-INF U-INF V-INF MU-INF ME/PI MREF TIMEF  
 (DEL M) (PSTA) (PI/SEC) (SLUGS/PI2) (FI-1) (R= .0175FI) (R= .0175FI)  
 9.2 .022 .986 3701 1.985E-05 7.588E-08 9.897E 05 2.434E-02 4.086E-02

CAMERA MULL NO PAINT TEMP (DEL F) INITIAL TEMP (DEL F) SQUARE ROOT (RHODACK) TBRM(TO) REIAT(O)  
 10F(T) 0515  
 310C(S) 0653 1/5 80 .0509 1.276E-01 1.2591E-01

PIC NO	TYPE	DELTIME	H(10)	M(10)/MREF	H(.910)	M(.910)/MREF	H(.91210)	M(.91210)/MREF	ST(10)
1	3197(175)	26.51	1.208E-03	.0521	1.570E-03	.0645	1.525E-03	.0627	2.107E-03
5	2950(175)	26.51	1.208E-03	.0521	1.570E-03	.0645	1.525E-03	.0627	2.107E-03
5	3198(175)	27.58	1.242E-03	.0510	1.538E-03	.0632	1.494E-03	.0614	2.062E-03
1	2951(175)	27.58	1.242E-03	.0510	1.538E-03	.0632	1.494E-03	.0614	2.062E-03
1	3199(175)	29.06	1.218E-03	.0500	1.507E-03	.0620	1.464E-03	.0602	2.022E-03
5	2952(175)	29.06	1.218E-03	.0500	1.507E-03	.0620	1.464E-03	.0602	2.022E-03
5	3200(175)	30.11	1.218E-03	.0491	1.490E-03	.0608	1.437E-03	.0591	1.985E-03
1	2953(175)	30.11	1.218E-03	.0491	1.490E-03	.0608	1.437E-03	.0591	1.985E-03
1	3200(175)	29.79	1.195E-03	.0491	1.479E-03	.0597	1.411E-03	.0580	1.948E-03
5	2954(175)	29.84	1.173E-03	.0482	1.453E-03	.0597	1.411E-03	.0580	1.948E-03
1	3201(175)	31.21	1.133E-03	.0474	1.427E-03	.0587	1.386E-03	.0570	1.915E-03
5	2955(175)	32.26	1.133E-03	.0474	1.427E-03	.0587	1.386E-03	.0570	1.915E-03
5	3202(175)	32.29	1.133E-03	.0474	1.427E-03	.0587	1.386E-03	.0570	1.915E-03
1	2956(175)	33.34	1.133E-03	.0465	1.403E-03	.0576	1.363E-03	.0560	1.880E-03
1	3203(175)	33.36	1.133E-03	.0465	1.403E-03	.0576	1.363E-03	.0560	1.880E-03
5	2957(175)	34.41	1.115E-03	.0458	1.380E-03	.0567	1.340E-03	.0551	1.850E-03
1	3204(175)	34.44	1.115E-03	.0458	1.380E-03	.0567	1.340E-03	.0551	1.850E-03
5	2958(175)	35.49	1.077E-03	.0451	1.358E-03	.0558	1.319E-03	.0542	1.822E-03
1	3205(175)	35.52	1.077E-03	.0451	1.358E-03	.0558	1.319E-03	.0542	1.822E-03
5	2959(175)	36.57	1.060E-03	.0444	1.337E-03	.0550	1.299E-03	.0534	1.795E-03
1	3206(175)	36.59	1.060E-03	.0444	1.337E-03	.0550	1.299E-03	.0534	1.795E-03
5	2960(175)	37.64	1.004E-03	.0437	1.317E-03	.0541	1.279E-03	.0526	1.767E-03
1	3207(175)	37.67	1.004E-03	.0437	1.317E-03	.0541	1.279E-03	.0526	1.767E-03

MODEL HAS LEFT CENTERLINE





GROUP 7  
6515

9/26/73

VAJ52

AEPC (AMC, INC.) ARNOLD AFS, TENNESSEE  
YUN KAHMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

001-001 YAW -00

SIREF  
HW= .0175FI  
4.077E-02

ТВАН(ТО)	БЕТА(ТО)
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✓HREF ST(10)

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✓HREF ST(10)

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UNCLASSIFIED  
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9/26/73

NASA-HI STS OHAC

AEUC (AUG INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PU(PSTIA) TO(DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND ROLL-MODEL YAW  
7 2 UNCLIFFM S 1.95 210.8 1.85 29.99 .01 -30.00 190.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF HE/FI MREF SINEF  
WEG H (PSTIA) (PSTIA) (SLUGS/FEI3) (FEI-1) (FEI-1) (M= .0175E-1) (M= .0175E-1)  
94.2 .022 .995 37.2 2.002E-05 7.58E-08 9.98E-05 2.445E-02 4.069E-02

CAMERA MULL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAK) TBAH(10) BETA(10)  
10P(1) 6515  
SITE(S) 6553 250 78 .0535 2.301E-01 2.5065E-01

PIC NO	TIME DELTME	H(10)	H(10)/HREF	M(-9IC)	M(-9IC)/HREF	M(-91210)	M(-91210)/HREF	ST(10)
1 3220(250)	12.74	11.61	3.936E-03	1610	5.002E-03	.2046	4.840E-03	1979
2 2974(250)	13.59	12.66	3.709E-03	1542	4.790E-03	.1959	4.634E-03	1895
1 3221(250)	14.02	12.68	3.766E-03	1540	4.785E-03	.1957	4.630E-03	1893
1 3222(250)	15.67	13.73	3.619E-03	1480	4.598E-03	.1881	4.439E-03	1820
2 2975(250)	15.67	13.73	3.619E-03	1480	4.598E-03	.1881	4.439E-03	1820
2 2976(250)	16.14	14.81	3.485E-03	1425	4.428E-03	.1811	4.284E-03	1752
1 3223(250)	16.17	14.83	3.485E-03	1424	4.424E-03	.1809	4.281E-03	1750
2 2977(250)	17.22	15.08	3.305E-03	1376	4.276E-03	.1748	4.137E-03	1691
1 3224(250)	17.24	15.91	3.362E-03	1375	4.272E-03	.1747	4.133E-03	1690
2 2978(250)	18.30	16.96	3.258E-03	1311	4.138E-03	.1692	4.003E-03	1637
1 3225(250)	18.32	16.99	3.258E-03	1310	4.135E-03	.1691	4.000E-03	1636
1 3226(250)	19.37	18.04	3.157E-03	1291	4.012E-03	.1640	3.882E-03	1587
2 2979(250)	19.37	18.04	3.157E-03	1291	4.012E-03	.1640	3.882E-03	1587
2 2980(250)	20.45	19.11	3.067E-03	1254	3.849E-03	.1593	3.771E-03	1542
1 3227(250)	20.47	19.14	3.069E-03	1253	3.849E-03	.1592	3.769E-03	1540
1 3228(250)	21.52	20.19	2.985E-03	1220	3.782E-03	.1550	3.689E-03	1499
2 2981(250)	21.52	20.19	2.985E-03	1220	3.782E-03	.1550	3.689E-03	1499
1 3229(250)	22.50	21.27	2.908E-03	1188	3.695E-03	.1510	3.575E-03	1461
2 2982(250)	22.50	21.27	2.908E-03	1188	3.695E-03	.1510	3.575E-03	1461
1 3230(250)	23.48	22.34	2.837E-03	1159	3.605E-03	.1473	3.488E-03	1426
2 2983(250)	23.48	22.34	2.837E-03	1159	3.605E-03	.1473	3.488E-03	1426
1 3231(250)	24.75	24.42	2.771E-03	1132	3.521E-03	.1439	3.407E-03	1392
2 2984(250)	24.75	24.42	2.771E-03	1132	3.521E-03	.1439	3.407E-03	1392
1 3232(250)	25.63	24.49	2.710E-03	1107	3.443E-03	.1407	3.331E-03	1361
2 2985(250)	25.63	24.49	2.710E-03	1107	3.443E-03	.1407	3.331E-03	1361

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41/26/13

AEUC(AHO,INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

## 50 INCH HYPERSONIC TUNNEL H

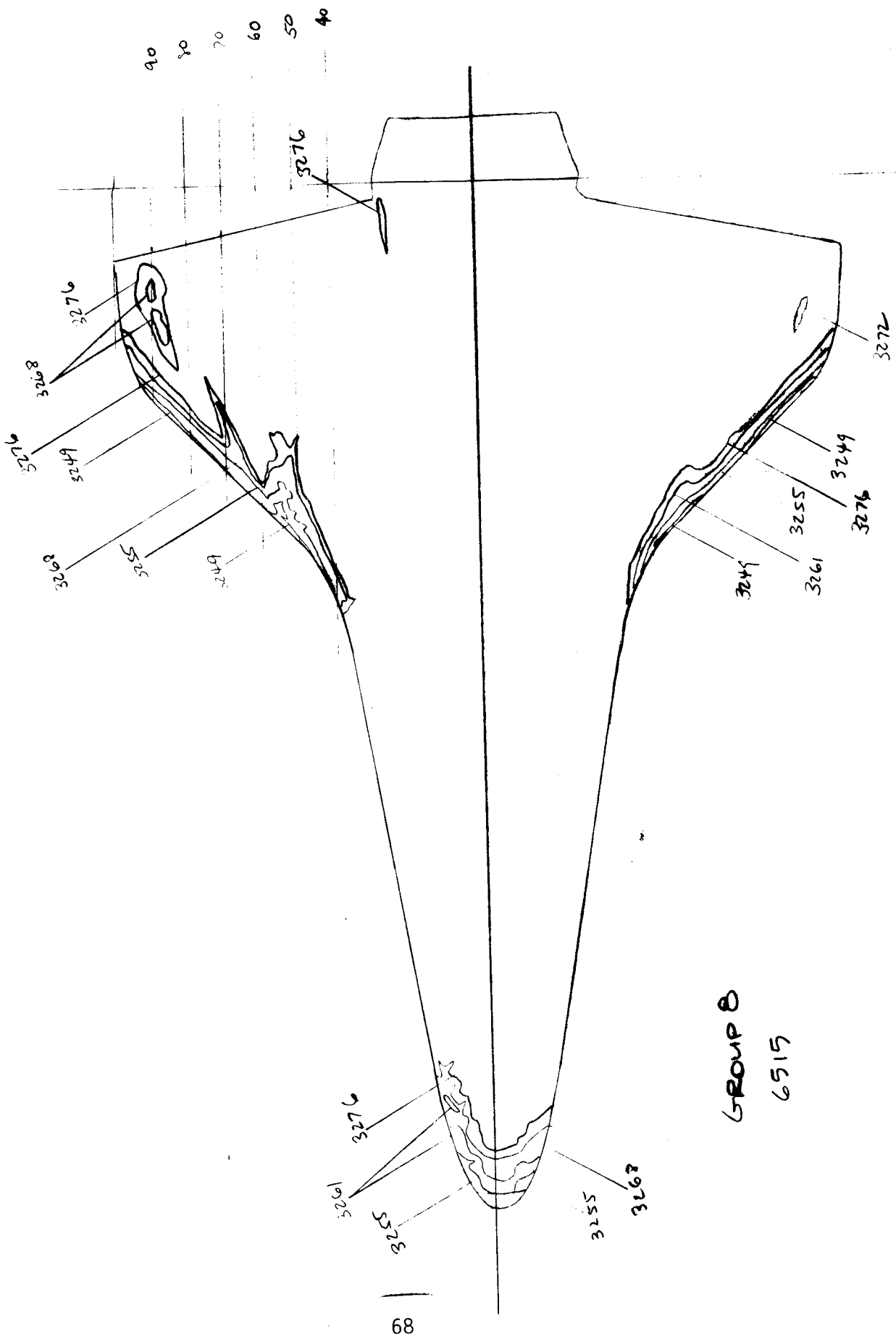
37415

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DE 1111101

**2.5065-01**

PIC NO	LINE	DELTIME	M(110)	M(110)/MREF	M(-910)	M(-910)/MREF	HL(-91210)	HL(-91210)/MREF	ST(110)
3233(250)	26.51	25.57	2.652E-03	.1084	3.370E-03	.1377	3.280E-03	.1332	4.338E-03
2586(250)	25.57	25.57	2.652E-03	.1084	3.370E-03	.1377	3.280E-03	.1332	4.338E-03
3234(250)	27.58	26.65	2.598E-03	.1061	3.301E-03	.1349	3.194E-03	.1305	4.248E-03
2587(250)	27.58	26.65	2.598E-03	.1061	3.301E-03	.1349	3.194E-03	.1305	4.248E-03
3235(250)	29.06	27.72	2.547E-03	.1041	3.246E-03	.1323	3.131E-03	.1280	4.168E-03
2588(250)	29.06	27.72	2.547E-03	.1041	3.246E-03	.1323	3.131E-03	.1280	4.168E-03
3236(250)	30.13	28.80	2.499E-03	.1021	3.175E-03	.1297	3.072E-03	.1255	4.084E-03
2589(250)	30.13	28.80	2.499E-03	.1021	3.175E-03	.1297	3.072E-03	.1255	4.084E-03
3237(250)	31.21	29.88	2.453E-03	.1002	3.118E-03	.1273	3.016E-03	.1232	4.010E-03
2590(250)	31.21	29.88	2.453E-03	.1002	3.118E-03	.1273	3.016E-03	.1232	4.010E-03
3238(250)	32.29	30.95	2.410E-03	.0984	3.063E-03	.1251	2.963E-03	.1210	3.939E-03
2591(250)	32.29	30.95	2.410E-03	.0984	3.063E-03	.1251	2.963E-03	.1210	3.939E-03
3239(250)	33.26	32.03	2.370E-03	.0968	3.011E-03	.1230	2.913E-03	.1190	3.873E-03
2592(250)	33.26	32.03	2.370E-03	.0968	3.011E-03	.1230	2.913E-03	.1190	3.873E-03
3240(250)	34.44	33.10	2.331E-03	.0952	2.962E-03	.1209	2.865E-03	.1170	3.807E-03
2593(250)	34.44	33.10	2.331E-03	.0952	2.962E-03	.1209	2.865E-03	.1170	3.807E-03
3241(250)	35.52	34.18	2.294E-03	.0937	2.915E-03	.1190	2.820E-03	.1151	3.747E-03
2594(250)	35.52	34.18	2.294E-03	.0937	2.915E-03	.1190	2.820E-03	.1151	3.747E-03
MODEL HAS LEFT CENTERLINE									
35.74									
2595(250)	36.57	35.23	2.259E-03	.0922	2.871E-03	.1172	2.778E-03	.1134	3.690E-03
3242(250)	36.57	35.26	2.258E-03	.0922	2.870E-03	.1172	2.777E-03	.1134	3.689E-03
2596(250)	37.54	36.31	2.225E-03	.0908	2.828E-03	.1154	2.748E-03	.1117	3.632E-03
3243(250)	37.57	36.33	2.225E-03	.0908	2.827E-03	.1154	2.735E-03	.1116	3.633E-03



GROUP B  
6515

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9/26/73

AEDC(AH-1) INC., ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL #

NASA-HI STS OH4C  
 VA352

GROUP CONFIG MODEL MACH NO P0(PSTA) U0(DEV H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND MOLL-MODEL YAW  
 8 9 CHESTER H6 7.95 210.4 1225 29.99 .01 -30.00 180.00 .00

1-INF P-INF U-INF V-INF HMO-INF MU-INF HE/FT HREF S/REF  
 (DEG H) (PSTA) (F1/SEC) (SLUGS/FT3) (LBS/SEC/FT2) (F1-J) (HE .01/FT) (MS .01/SEC)

9.2 .022 .953 3700 2.000E-05 7.563E-08 5.971E 05 2.443E-02 5.071E-02

LAPEKA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMUACAK) TBAK(TO) BEIA(TO)  
 10P(T) 6515  
 SIDE(S) 6553 350 80 .0550 0 0

PIC NO TIME DELT(M) H(TO) HREF H(.910) M(-9TO)/HREF H(.912TO) HL.912TO/PREF ST(JO)

1 3244(350) .05 MODEL HAS NOT REACHED CENTERLINE  
 2 2997(350) .05 MODEL HAS NOT REACHED CENTERLINE  
 3 2998(350) .10 MODEL HAS NOT REACHED CENTERLINE  
 1 3245(350) .113 MODEL HAS NOT REACHED CENTERLINE  
 2 2999(350) .218 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.40

1	3000(350)	3.63	1.89	1.894E-02	.7535	2.461E-02	1.0074	2.362E-02	.9669	3.004E-02
1	3247(350)	3.65	1.90	1.824E-02	.7485	2.445E-02	1.0004	2.347E-02	.9605	2.984E-02
1	3001(350)	4.20	2.96	1.450E-02	.5009	1.963E-02	.8034	1.805E-02	.7710	2.396E-02
1	3246(350)	4.23	2.98	1.402E-02	.5982	1.954E-02	.7998	1.876E-02	.7676	2.384E-02
1	3002(350)	5.28	4.03	1.257E-02	.5145	1.680E-02	.6879	1.613E-02	.6602	2.051E-02
1	3248(350)	5.41	4.06	1.253E-02	.5129	1.675E-02	.6857	1.609E-02	.6581	2.045E-02
1	3250(350)	6.48	5.13	1.114E-02	.4559	1.489E-02	.6055	1.429E-02	.5850	1.817E-02
1	3003(350)	6.48	5.13	1.114E-02	.4559	1.489E-02	.6055	1.429E-02	.5850	1.817E-02
1	3004(350)	7.56	6.21	1.013E-02	.4134	1.359E-02	.5580	1.300E-02	.5317	1.651E-02
1	3251(350)	7.58	6.23	1.011E-02	.4136	1.351E-02	.5531	1.297E-02	.5308	1.649E-02
1	3252(350)	8.63	7.29	9.350E-03	.3825	1.250E-02	.5115	1.200E-02	.4909	1.524E-02
1	3005(350)	8.63	7.29	9.350E-03	.3825	1.250E-02	.5115	1.200E-02	.4909	1.524E-02
1	3253(350)	9.71	8.36	8.728E-03	.3572	1.167E-02	.4775	1.120E-02	.4583	1.424E-02
1	3006(350)	9.71	8.36	8.728E-03	.3572	1.167E-02	.4775	1.120E-02	.4583	1.424E-02
1	3254(350)	10.79	9.44	8.215E-03	.3361	1.098E-02	.4494	1.054E-02	.4313	1.339E-02
1	3007(350)	10.79	9.44	8.215E-03	.3361	1.098E-02	.4494	1.054E-02	.4313	1.339E-02
1	3255(350)	11.86	10.51	7.783E-03	.3184	1.041E-02	.4257	.9987E-03	.4085	1.268E-02
1	3008(350)	11.86	10.51	7.783E-03	.3184	1.041E-02	.4257	.9987E-03	.4085	1.268E-02
1	3256(350)	12.94	11.59	7.413E-03	.3032	9.912E-03	.4054	.9512E-03	.3891	1.208E-02
1	3009(350)	12.94	11.59	7.413E-03	.3032	9.912E-03	.4054	.9512E-03	.3891	1.208E-02

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5/26/73

NASA-HI STS CHAC

AEUC(AH0, INC.) ANNULU AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO (PSIA) TO (UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND MOLL-MODEL YAW  
 8 9 0RE11CH H6 7.95 210.8 1284 29.99 .01 -30.00 180.00 .00

1-1NF P-1NF U-1NF V-1NF RH0=INF MU=INF RE/F1 HREF S1REF  
 (UEG H) (PSIA) (FI/SEC) (SLUGS/FI3) (LBS/SEC/FI2) (FI-1) (H= .0175EI) (H= .0175EI)  
 94.2 .022 .995 3700 2.004E-05 7.581E-08 5.592E-05 2.445E-06 4.067E-02

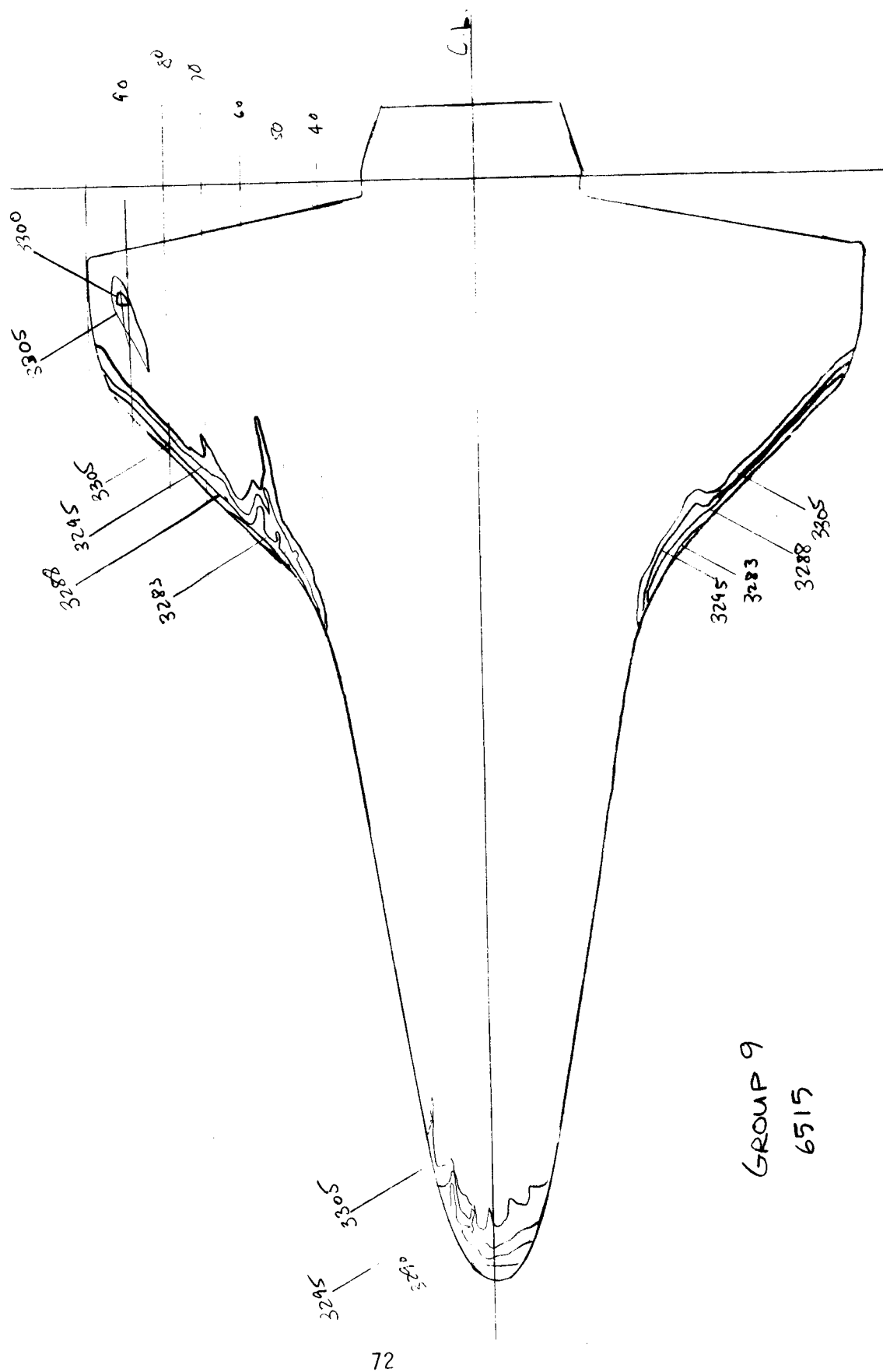
CAPEHA MOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RH0/CAK) TBAR(TO) BETA(TO)  
 10P(T) 6515  
 31UE(S) 350 80 .0550 3.626E-01 4.5888E-01

PIC NO	TIME	VELTIME	H(TO)	HREF	H(10)	H(910)	M(1.910)	M(1.910)/HREF	M(1.91210)	HREF	ST(10)
1	3257(1350)	14.02	12.67	7.091E-03	.2901	9.481E-03	.3879	9.099E-03	.3723	1.156E-02	
2	3010(1350)	14.02	12.67	7.091E-03	.2901	9.481E-03	.3879	9.099E-03	.3723	1.156E-02	
3	3258(1350)	13.69	13.74	6.808E-03	.2784	9.103E-03	.3722	8.736E-03	.3572	1.109E-02	
4	3011(1350)	13.69	13.74	6.808E-03	.2784	9.103E-03	.3722	8.736E-03	.3572	1.109E-02	
5	3259(1350)	14.17	14.82	6.556E-03	.2681	8.766E-03	.3585	8.413E-03	.3440	1.068E-02	
6	3012(1350)	14.17	14.82	6.556E-03	.2681	8.766E-03	.3585	8.413E-03	.3440	1.068E-02	
7	3260(1350)	17.64	15.90	6.330E-03	.2588	8.464E-03	.3460	8.123E-03	.3321	1.031E-02	
8	3013(1350)	17.64	15.90	6.330E-03	.2588	8.464E-03	.3460	8.123E-03	.3321	1.031E-02	
9	3261(1350)	18.32	16.97	6.126E-03	.2505	8.191E-03	.3349	7.861E-03	.3214	9.974E-03	
10	3014(1350)	18.32	16.97	6.126E-03	.2505	8.191E-03	.3349	7.861E-03	.3214	9.974E-03	
11	3262(1350)	19.40	18.05	5.941E-03	.2429	7.943E-03	.3247	7.623E-03	.3117	9.672E-03	
12	3015(1350)	19.40	18.05	5.941E-03	.2429	7.943E-03	.3247	7.623E-03	.3117	9.672E-03	
13	3263(1350)	20.47	19.12	5.711E-03	.2359	7.716E-03	.3154	7.405E-03	.3027	9.391E-03	
14	3016(1350)	20.47	19.12	5.711E-03	.2359	7.716E-03	.3154	7.405E-03	.3027	9.391E-03	
15	3264(1350)	21.25	20.20	5.515E-03	.2295	7.508E-03	.3069	7.206E-03	.2945	9.138E-03	
16	3017(1350)	21.25	20.20	5.515E-03	.2295	7.508E-03	.3069	7.206E-03	.2945	9.138E-03	
17	3265(1350)	22.63	21.24	5.471E-03	.2236	7.316E-03	.2990	7.021E-03	.2870	8.904E-03	
18	3018(1350)	22.63	21.24	5.471E-03	.2236	7.316E-03	.2990	7.021E-03	.2870	8.904E-03	
19	3019(1350)	23.70	22.35	5.338E-03	.2181	7.137E-03	.2917	6.850E-03	.2799	8.683E-03	
20	3266(1350)	23.73	22.38	5.335E-03	.2180	7.133E-03	.2915	6.846E-03	.2798	8.678E-03	
21	3020(1350)	24.78	23.43	5.214E-03	.2131	6.972E-03	.2849	6.691E-03	.2734	8.481E-03	
22	3267(1350)	24.80	23.45	5.211E-03	.2130	6.968E-03	.2847	6.687E-03	.2733	8.477E-03	
23	3021(1350)	25.85	24.51	5.098E-03	.2083	6.817E-03	.2786	6.542E-03	.2673	8.293E-03	
24	3268(1350)	25.88	24.53	5.096E-03	.2082	6.813E-03	.2784	6.539E-03	.2672	8.289E-03	
25	3022(1350)	26.93	25.58	4.990E-03	.2039	6.672E-03	.2726	6.403E-03	.2616	8.113E-03	

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GROUP 9  
6515

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9/26/73

NASA-WI SIS OHAC

AEUC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO PO(PSIAL) (OUEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREPEND HULL-MODEL YAW  
 9 10 UNREF M7 7.95 209.1 1281 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF W-INF MU-INF HE/FF HREF SREF  
 (UEG R) (PSIAL) (PSIAL) (PSIAL) (SLUGS/FT) (LH-SLU/FT) (FT-L) (H= .0175FT) (H= .0175FT)  
 93.9 .022 .987 37.5 1.993E-05 7.561E-02 9.952E 05 2.434E-02 2.077E-02

CAPCHA HULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAK) TBAH(TO) RE(A(TO))  
 10P(T) 6513  
 SITE(S) 6653 350 82 .0550 0 0

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	M(.910)/HREF	M(.91210)	H(.91210)/HREF	ST(TO)
1 3278(350)	.05	MODEL HAS NOT REACHED CENTERLINE						
2 3031(350)	.05	MODEL HAS NOT REACHED CENTERLINE						
1 3279(350)	1.10	MODEL HAS NOT REACHED CENTERLINE						
2 3032(350)	1.10	MODEL HAS NOT REACHED CENTERLINE						
1 3280(350)	2.18	MODEL HAS NOT REACHED CENTERLINE						
2 3033(350)	2.18	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.40								
1 3034(350)	3.23	1.84E-02	.7560	2.466E-02	1.0126	2.366E-02	.9715	3.017E-02
2 3281(350)	3.25	1.824E-02	.7510	2.450E-02	1.0059	2.350E-02	.9651	2.947E-02
1 3035(350)	4.20	1.408E-02	.6029	1.967E-02	.8075	1.887E-02	.7747	2.406E-02
2 3036(350)	4.23	1.402E-02	.6003	1.958E-02	.8041	1.879E-02	.7714	2.396E-02
1 3283(350)	5.41	1.253E-02	.5157	1.684E-02	.6907	1.615E-02	.6627	2.056E-02
2 3037(350)	5.46	1.117E-02	.4585	1.674E-02	.6840	1.610E-02	.6611	2.053E-02
1 3284(350)	5.13	1.114E-02	.4574	1.492E-02	.6126	1.435E-02	.5892	1.829E-02
2 3038(350)	5.23	1.013E-02	.4166	1.360E-02	.5580	1.304E-02	.5353	1.825E-02
1 3285(350)	6.21	9.309E-03	.3845	1.357E-02	.5568	1.302E-02	.5342	1.658E-02
2 3039(350)	6.23	8.352E-03	.3838	1.259E-02	.5150	1.204E-02	.4941	1.534E-02
1 3286(350)	7.29	8.743E-03	.3588	1.171E-02	.5141	1.202E-02	.4932	1.531E-02
2 3040(350)	7.31	8.730E-03	.3583	1.169E-02	.4806	1.123E-02	.4611	1.431E-02
1 3287(350)	8.41	8.228E-03	.3377	1.102E-02	.4798	1.122E-02	.4604	1.429E-02
2 3041(350)	10.76	8.217E-03	.3371	1.101E-02	.4523	1.057E-02	.4339	1.347E-02
1 3288(350)	10.79	7.744E-03	.3198	1.044E-02	.4516	1.056E-02	.4332	1.344E-02
2 3042(350)	10.84	7.744E-03	.3198	1.044E-02	.4278	1.002E-02	.4109	1.275E-02
1 3289(350)	11.26	7.785E-03	.3194	1.043E-02	.4278	1.000E-02	.4105	1.274E-02
2 3043(350)	11.59	7.415E-03	.3042	9.931E-03	.4074	9.528E-03	.3909	1.213E-02
1 3290(350)	12.44	7.415E-03	.3042	9.931E-03	.4074	9.528E-03	.3909	1.213E-02

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9/26/73

NASA-HI STS OMAC

AEDC(AHO, INC.) ANNULD AFS, TENNESSEE  
 YUN KAHMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

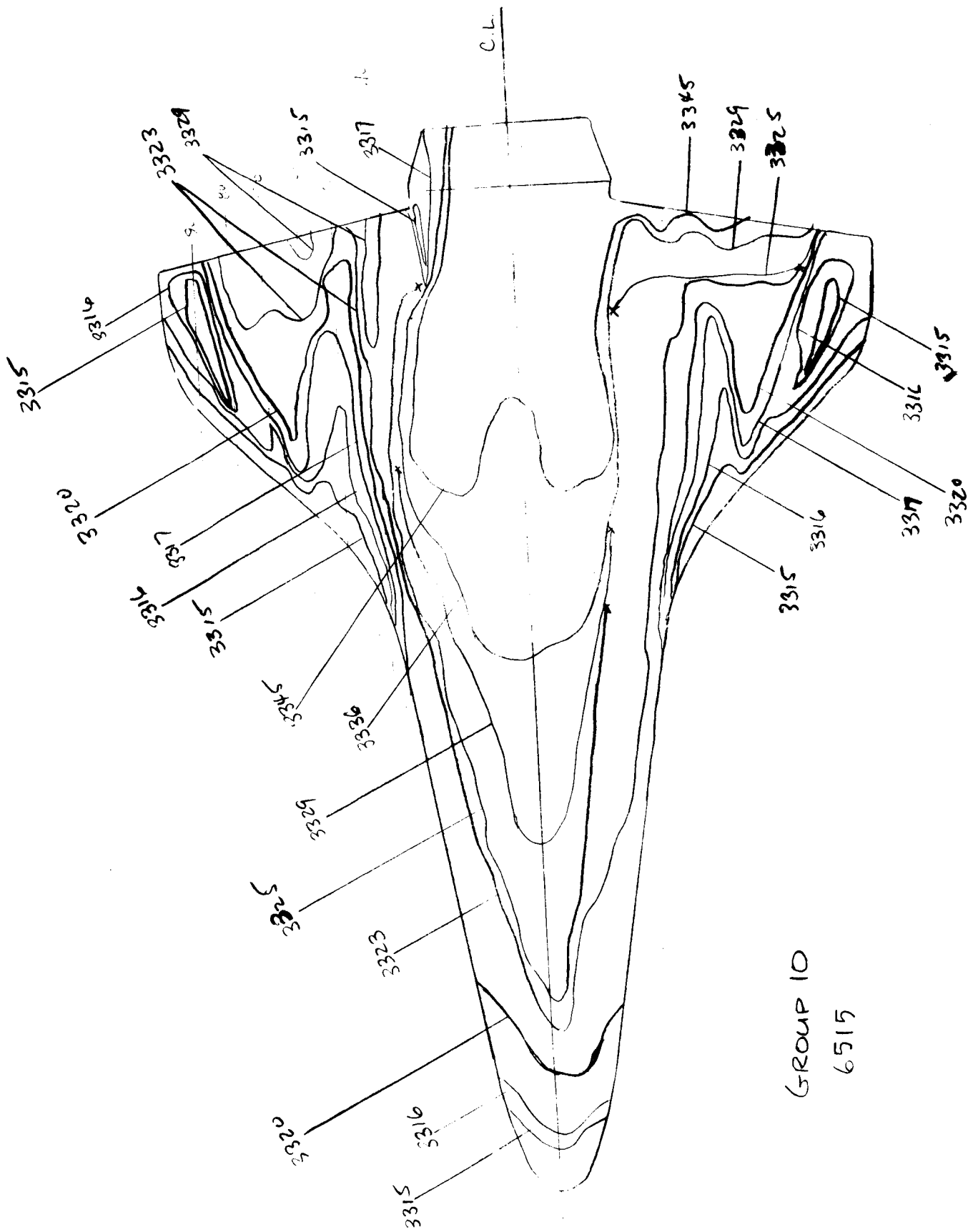
GROUP CONFIG MODEL MACH NO MU(PSTIA) IUGED M ALPPA-MODEL ALPHA-SECTION ALPHA-PREHEND HOLL-MODEL YAW  
 9 10 UNCLITEM R7 7.95 210.3 1281 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF W-INF MU-INF ME/FF HREF SINEF  
 IUGED M1 (PSTIA) (PLZSEC) (SLUGS/EL3) (LR-SLZ/EL2) (EL-1) (R= .0175F) (R= .0175F)  
 93.9 .022 .993 37.5 2.005E-05 7.561E-08 1.001E 06 2.441E-02 4.065E-02

CAMERA HOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMGACAK) TBAH(TU) BEI(AIT0)  
 TOP(T) 6215  
 SLUE(15) 6053 350 82 .0550 3.627E-01 4.5099E-01

PIC NO	TIME DELTIME	H(TU)	H(TU)/HREF	H(.910)	MI(.910)/HREF	MI(.91210)	HI(.91210)/HREF	ST(10)
1 3303(350)	26.96	4.969E-03	.2094	6.692E-03	.2738	6.410E-03	.2626	8.139E-03
2 3057(350)	26.01	4.809E-03	.2003	6.549E-03	.2683	6.243E-03	.2574	7.977E-03
3 3304(350)	26.03	4.804E-03	.2002	6.545E-03	.2682	6.240E-03	.2573	7.973E-03
4 3058(350)	27.13	4.774E-03	.1984	6.420E-03	.2630	6.100E-03	.2523	7.817E-03
5 3305(350)	27.11	4.791E-03	.1983	6.417E-03	.2629	6.157E-03	.2522	7.814E-03
6 3059(350)	27.81	4.703E-03	.1927	6.294E-03	.2580	6.044E-03	.2476	7.689E-03
7 3306(350)	28.84	4.701E-03	.1926	6.290E-03	.2579	6.041E-03	.2475	7.686E-03
8 3060(350)	31.24	4.618E-03	.1892	6.185E-03	.2533	5.934E-03	.2431	7.530E-03
9 3307(350)	29.89	4.616E-03	.1891	6.182E-03	.2532	5.931E-03	.2430	7.527E-03
10 3061(350)	30.96	4.537E-03	.1858	6.016E-03	.2489	5.830E-03	.2388	7.398E-03
11 3308(350)	30.99	4.535E-03	.1857	6.014E-03	.2487	5.827E-03	.2387	7.391E-03
12 3062(350)	32.04	4.460E-03	.1826	5.973E-03	.2446	5.731E-03	.2347	7.269E-03
13 3309(350)	32.06	4.458E-03	.1826	5.971E-03	.2445	5.729E-03	.2346	7.266E-03
14 3310(350)	33.12	4.387E-03	.1797	5.875E-03	.2407	5.637E-03	.2309	7.152E-03
15 3063(350)	34.46	4.317E-03	.1768	5.822E-03	.2368	5.548E-03	.2272	7.036E-03
16 3311(350)	34.19	4.317E-03	.1768	5.822E-03	.2368	5.548E-03	.2272	7.036E-03
17 3064(350)	35.54	4.317E-03	.1768	5.822E-03	.2368	5.548E-03	.2272	7.036E-03
18 3312(350)	35.57	4.317E-03	.1768	5.822E-03	.2368	5.548E-03	.2272	7.036E-03

MODEL HAS LEFT CENTERLINE



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5/26/73

NASA-HI STS 044C

AEUC(AERO, INC.) ANNULUS AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MALE NO MU (PSIA) TO (DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND MOLL-MODEL YAW  
 10 2 CHELIER S 7.95 210-2 1277 29.99 .01 -30-00 180-00 .00

1-IMP P-IMP U-IMP V-IMP RHU-IMP MU-IMP HE/FT MHEF SINEF  
 (DEG H) (PSIA) (PI/SEC) (SLUGS/FT<sup>3</sup>) (LBS-SEC/FT<sup>2</sup>) (FT-L) (M= .0175F1) (M= .0175F1)  
 93.6 .022 .992 3770 2.009E-05 7.540E-02 1.005E 06 2.439E-02 4.059E-02

LAPEHA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MHUACA) TBAH(TO) BETA(TO)

10P(T) 6515  
 SIDE(S) 6553 1/5 80 .0509 0 0

PIC NO TIME DELINE M(TU) H(TU)/MHEF F(.910) M(.910)/MHEF H(.91210) H(.91210)/MHEF S(101)

1 3312(175) .05 MODEL HAS NOT REACHED CENTERLINE  
 2 3005(175) .05 MODEL HAS NOT REACHED CENTERLINE  
 3 3313(175) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 4 3066(175) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 5 3314(175) 2.18 MODEL HAS NOT REACHED CENTERLINE  
 6 3067(175) 2.18 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.34

1	3068(175)	3.23	1.89	4.710E-03	.1931	5.840E-03	.2394	5.671E-03	.2325	7.747E-03
2	3315(175)	3.25	1.92	4.679E-03	.1918	5.802E-03	.2378	5.634E-03	.2309	7.697E-03
3	3069(175)	4.20	2.97	3.701E-03	.1542	4.664E-03	.1912	4.528E-03	.1858	6.186E-03
4	3316(175)	4.23	3.00	3.745E-03	.1535	4.644E-03	.1904	4.504E-03	.1849	6.161E-03
5	3070(175)	5.28	4.05	3.222E-03	.1321	3.995E-03	.1637	3.808E-03	.1590	5.298E-03
6	3317(175)	5.41	4.07	3.212E-03	.1317	3.983E-03	.1632	3.808E-03	.1585	5.281E-03
7	3071(175)	6.46	5.12	2.809E-03	.1173	3.551E-03	.1455	3.448E-03	.1413	4.706E-03
8	3318(175)	6.48	5.15	2.857E-03	.1171	3.542E-03	.1451	3.440E-03	.1409	4.695E-03
9	3072(175)	7.53	5.20	2.604E-03	.1067	3.224E-03	.1323	3.135E-03	.1284	4.278E-03
10	3319(175)	7.56	5.22	2.598E-03	.1065	3.222E-03	.1320	3.128E-03	.1282	4.270E-03
11	3073(175)	8.61	7.28	2.403E-03	.0985	2.980E-03	.1221	2.893E-03	.1186	3.949E-03
12	3320(175)	8.63	7.30	2.399E-03	.0983	2.975E-03	.1219	2.888E-03	.1183	3.940E-03
13	3074(175)	9.71	8.38	2.240E-03	.0917	2.777E-03	.1138	2.696E-03	.1105	3.679E-03
14	3321(175)	9.71	8.38	2.240E-03	.0917	2.777E-03	.1138	2.696E-03	.1105	3.679E-03
15	3075(175)	10.76	9.43	2.111E-03	.0855	2.618E-03	.1072	2.542E-03	.1041	3.468E-03
16	3322(175)	10.79	9.45	2.108E-03	.0854	2.614E-03	.1071	2.538E-03	.1040	3.463E-03
17	3076(175)	11.84	10.50	2.000E-03	.0819	2.480E-03	.1016	2.408E-03	.0986	3.285E-03
18	3323(175)	11.86	10.53	1.998E-03	.0818	2.477E-03	.1015	2.405E-03	.0985	3.281E-03
19	3077(175)	12.94	11.61	1.843E-03	.0719	2.359E-03	.0966	2.291E-03	.0938	3.124E-03
20	3324(175)	12.94	11.61	1.843E-03	.0719	2.359E-03	.0966	2.291E-03	.0938	3.124E-03

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9/26/73

NASA-HI STS 044C

AEDC (AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MAJOR NO PO (PSIA) TO (UEG M) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND MOLL-MODEL YAW  
 10 2 GREIFER S 7.95 211.2 1277 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF RE/FI MREF SIMEF  
 (UEG M) (PSIA) (PI/SEC) (SLUGS/PI3) (LBS/SEC/PI3) (PI-1) (HE .0175FI) (KE .0175FI)  
 93.6 .023 .997 3769 2.019E-05 7.538E-08 1.010E 06 2.445E-02 9.049E-02

CAMERA MOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAK) TBAR(TU) REFA(TU)  
 10P(T) 0515  
 SIDE(S) 6553 175 H0 .0509 1.289E-01 1.2734E-01

PIC NO	TIME DELTIVE	H(TU)	MREF	H(.910)	M(.910)/MREF	H(.91210)	M(.91210)/MREF	SI(TU)
1 3336(175)	26.01	26.67	1.255E-03	.0513	1.558E-03	1.511E-03	.0618	2.056E-03
2 3091(175)	26.01	26.67	1.255E-03	.0513	1.558E-03	1.511E-03	.0618	2.056E-03
1 3339(175)	29.08	27.75	1.230E-03	.0503	1.528E-03	1.482E-03	.0606	2.014E-03
2 3092(175)	29.08	27.75	1.230E-03	.0503	1.528E-03	1.482E-03	.0606	2.014E-03
1 3340(175)	30.16	28.82	1.207E-03	.0494	1.497E-03	1.454E-03	.0594	1.976E-03
2 3093(175)	30.16	28.82	1.207E-03	.0494	1.497E-03	1.454E-03	.0594	1.976E-03
1 3341(175)	31.21	29.88	1.186E-03	.0485	1.478E-03	1.428E-03	.0584	1.941E-03
2 3094(175)	31.21	29.88	1.186E-03	.0485	1.478E-03	1.428E-03	.0584	1.941E-03
1 3342(175)	32.29	30.95	1.165E-03	.0476	1.445E-03	1.403E-03	.0574	1.907E-03
2 3095(175)	32.29	30.95	1.165E-03	.0476	1.445E-03	1.403E-03	.0574	1.907E-03
1 3343(175)	33.26	32.03	1.145E-03	.0468	1.420E-03	1.379E-03	.0564	1.875E-03
2 3096(175)	33.26	32.03	1.145E-03	.0468	1.420E-03	1.379E-03	.0564	1.875E-03
1 3343(175)	34.29	33.10	1.127E-03	.0461	1.397E-03	1.356E-03	.0555	1.843E-03
2 3097(175)	34.29	33.10	1.127E-03	.0461	1.397E-03	1.356E-03	.0555	1.843E-03
1 3344(175)	35.24	34.18	1.109E-03	.0453	1.374E-03	1.333E-03	.0546	1.814E-03
2 3098(175)	35.24	34.18	1.109E-03	.0453	1.374E-03	1.333E-03	.0546	1.814E-03
1 3345(175)	36.22	35.28	1.091E-03	.0446	1.353E-03	1.314E-03	.0537	1.785E-03
2 3099(175)	36.22	35.28	1.091E-03	.0446	1.353E-03	1.314E-03	.0537	1.785E-03



A hand-drawn contour map showing a geological area. The map features several contour lines and numerous elevation points labeled with numbers. A central feature is labeled 'O.L.'. The map is oriented with a vertical axis on the left and a horizontal axis at the top. The elevation points are distributed across the map, with some points clustered together and others isolated. The contour lines are drawn in a way that suggests a three-dimensional surface, with some areas appearing to be higher or lower than others. The overall shape of the map is irregular, with a central elongated feature and several smaller, more complex shapes on the sides. The labels for the elevation points are written in a clear, legible font, and the contour lines are drawn with a steady hand. The map is a good example of a hand-drawn geological sketch.

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GROUP 11  
6515

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9/26/73

MASA-HI SIS OHAC

AEC(AMC, INC.) ARNOLD AFB, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) LO(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 11 9 UNCLIFF M6 7.95 209.7 1275 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF ME/FI HREF SIMEF  
 (DEG H) (PSIA) (PSIA) (PSIA) (SLUGS/FT<sup>3</sup>) (LBS-SLUG/FT<sup>3</sup>) (FI-1) (H = .0175FI) (H = .0175FI)  
 93.5 .022 .990 3766 2.009E-05 7.523E-08 1.005E 06 2.435E-02 4.059E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MMX/CM) TRAN(TO) BETA(TO)  
 10P(1) 6515  
 510(1) 6553 175 H1 .0509 0 0

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)
1 334(1175)	.65	MODEL HAS NOT REACHED CENTERLINE						
5 3100(1175)	.65	MODEL HAS NOT REACHED CENTERLINE						
5 3101(1175)	1.10	MODEL HAS NOT REACHED CENTERLINE						
1 3348(1175)	1.13	MODEL HAS NOT REACHED CENTERLINE						
1 3349(1175)	1.13	MODEL HAS NOT REACHED CENTERLINE						
5 3102(1175)	1.18	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.40								
5 3103(1175)	3.23	4.676E-03	.1427	5.824E-03	.2340	5.056E-03	.2321	7.733E-03
1 3350(1175)	3.25	4.605E-03	.1915	5.785E-03	.2375	5.019E-03	.2306	7.682E-03
5 3104(1175)	4.50	3.743E-03	.1537	4.844E-03	.1906	4.510E-03	.1851	6.166E-03
1 3351(1175)	4.53	3.729E-03	.1530	4.825E-03	.1498	4.471E-03	.1843	6.140E-03
5 3105(1175)	5.28	3.206E-03	.1316	3.976E-03	.1632	3.802E-03	.1585	5.277E-03
1 3352(1175)	5.41	3.176E-03	.1312	3.964E-03	.1627	3.850E-03	.1580	5.261E-03
5 3106(1175)	6.46	2.846E-03	.1169	3.533E-03	.1449	3.431E-03	.1408	4.686E-03
1 3353(1175)	6.48	2.842E-03	.1168	3.524E-03	.1446	3.423E-03	.1404	4.677E-03
5 3107(1175)	7.23	2.589E-03	.1082	3.211E-03	.1317	3.118E-03	.1280	4.261E-03
1 3354(1175)	7.26	2.564E-03	.1080	3.204E-03	.1315	3.112E-03	.1277	4.252E-03
5 3108(1175)	8.61	2.349E-03	.0980	2.963E-03	.1216	2.878E-03	.1181	3.931E-03
1 3355(1175)	8.63	2.365E-03	.0979	2.958E-03	.1214	2.873E-03	.1179	3.926E-03
5 3109(1175)	9.71	2.226E-03	.0914	2.761E-03	.1133	2.682E-03	.1100	3.664E-03
1 3356(1175)	9.71	2.226E-03	.0914	2.761E-03	.1133	2.682E-03	.1100	3.664E-03
5 3110(1175)	10.79	2.096E-03	.0850	2.599E-03	.1066	2.524E-03	.1036	3.448E-03
1 3357(1175)	10.79	2.096E-03	.0850	2.599E-03	.1066	2.524E-03	.1036	3.448E-03
5 3111(1175)	11.56	1.905E-03	.0814	2.462E-03	.1010	2.391E-03	.0981	3.265E-03
1 3358(1175)	11.56	1.905E-03	.0814	2.462E-03	.1010	2.391E-03	.0981	3.265E-03
5 3112(1175)	12.54	1.891E-03	.0776	2.345E-03	.0962	2.278E-03	.0934	3.110E-03
1 3359(1175)	12.54	1.891E-03	.0776	2.345E-03	.0962	2.278E-03	.0934	3.110E-03

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5/26/73

NASA-M1 STS OH4C

AEDC(HMO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PD(PSIA) TD(SEC) MU-IMP MU-IMP HE/FI HREF SREF  
 11 9 00000000 7.95 210.2 1275 29.99 .01 -30.00 180.00 .00

T-IMP P-IMP Q-IMP (P/SEC) (L/SEC) (L/SEC/FI) (L/SEC/FI) (L/SEC/FI) (L/SEC/FI) (L/SEC/FI)  
 93.5 .022 .992 3706 2.013E-05 7.525E-06 1.008E-06 2.438E-06 4.054E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAK) TRAN(10) RE(10)  
 TOP(1) 0215  
 SIDE(5) 0653 1/5 81 .0509 1.281E-01 1.2649E-01

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(910)	ML(910)/HREF	ML(912U)	H(912U)/HREF	ST(10)
1	3300(175) 14.02	1.809E-03	.0742	2.243E-03	.0920	2.179E-03	.0694	2.975E-03
2	3113(175) 14.02	1.809E-03	.0742	2.243E-03	.0920	2.179E-03	.0694	2.975E-03
3	3361(175) 15.09	1.737E-03	.0712	2.154E-03	.0883	2.092E-03	.0658	2.856E-03
4	3114(175) 15.09	1.737E-03	.0712	2.154E-03	.0883	2.092E-03	.0658	2.856E-03
5	3362(175) 16.17	1.672E-03	.0686	2.074E-03	.0851	2.014E-03	.0626	2.749E-03
6	3115(175) 16.17	1.672E-03	.0686	2.074E-03	.0851	2.014E-03	.0626	2.749E-03
7	3363(175) 16.24	1.615E-03	.0662	2.003E-03	.0821	1.945E-03	.0797	2.653E-03
8	3116(175) 16.24	1.615E-03	.0662	2.003E-03	.0821	1.945E-03	.0797	2.653E-03
9	3364(175) 16.32	1.503E-03	.0641	1.934E-03	.0795	1.882E-03	.0772	2.567E-03
10	3117(175) 16.32	1.503E-03	.0641	1.934E-03	.0795	1.882E-03	.0772	2.567E-03
11	3365(175) 17.40	1.515E-03	.0621	1.874E-03	.0770	1.825E-03	.0748	2.489E-03
12	3118(175) 17.40	1.515E-03	.0621	1.874E-03	.0770	1.825E-03	.0748	2.489E-03
13	3366(175) 20.47	1.472E-03	.0603	1.826E-03	.0748	1.773E-03	.0727	2.417E-03
14	3119(175) 20.47	1.472E-03	.0603	1.826E-03	.0748	1.773E-03	.0727	2.417E-03
15	3367(175) 21.55	1.432E-03	.0587	1.777E-03	.0728	1.725E-03	.0707	2.351E-03
16	3120(175) 21.55	1.432E-03	.0587	1.777E-03	.0728	1.725E-03	.0707	2.351E-03
17	3368(175) 22.63	1.390E-03	.0572	1.731E-03	.0709	1.681E-03	.0689	2.291E-03
18	3121(175) 22.63	1.390E-03	.0572	1.731E-03	.0709	1.681E-03	.0689	2.291E-03
19	3122(175) 23.70	1.362E-03	.0558	1.689E-03	.0692	1.640E-03	.0672	2.235E-03
20	3369(175) 23.73	1.301E-03	.0538	1.608E-03	.0676	1.569E-03	.0656	2.234E-03
21	3123(175) 23.78	1.301E-03	.0538	1.608E-03	.0676	1.569E-03	.0656	2.234E-03
22	3370(175) 24.80	1.329E-03	.0545	1.639E-03	.0676	1.591E-03	.0656	2.182E-03
23	3124(175) 24.85	1.301E-03	.0533	1.613E-03	.0661	1.566E-03	.0642	2.134E-03
24	3371(175) 25.88	1.300E-03	.0533	1.612E-03	.0661	1.566E-03	.0642	2.133E-03
25	3125(175) 25.93	1.273E-03	.0522	1.579E-03	.0647	1.533E-03	.0628	2.089E-03

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9/26/73

NASA-HI STS OMAC

AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO POT(PSTAL) IO(DEV H) ALPFA-MODEL ALPHA-SECUM ALPHA-PREHEND MOLL-MODEL YAW  
11 9 UNCLITEM H6 7.95 210.6 1275 24.99 .01 -30.00 160.00 .00

I-INF P-INF Q-INF V-INF RHO-INF MU-INF ME/FI MREF SIMEF  
(DEV H) (PSTAL) (PIZSEC) (SLUGS/FL3) (LH-SEC/FL2) (FI-1) (KE-.0175FI) (M2-.0175FI)  
93.5 .022 .994 3700 2.017E-05 7.525E-08 1.009E 06 2.440E-02 4.051E-02

CAMERA MOLL NO PAINT TEMP (DEV F) INITIAL TEMP (DEV F) SQUARE ROOT (RMCACCK) TBARH(TO) BETA(TO)

TOP(T) 6512  
SIDE(S) 6553 1/5 d1 .0509 1.281E-01 1.2649E-01

PIC NO	TIME DELTIME	H(10)	M(TO)/MREF	H(-910)	M(-910)/MREF	M(.91210)	H(.91210)/MREF	ST(10)
1	3372(175) 26.56 25.01	1.272E-03	.0521	1.578E-03	.0647	1.532E-03	.0628	2.088E-03
5	3120(175) 26.01 26.66	1.247E-03	.0511	1.546E-03	.0634	1.502E-03	.0615	2.046E-03
1	3373(175) 26.03 26.64	1.246E-03	.0511	1.546E-03	.0634	1.501E-03	.0615	2.046E-03
5	3127(175) 26.04 27.73	1.222E-03	.0501	1.518E-03	.0621	1.472E-03	.0603	2.006E-03
1	3374(175) 26.11 27.76	1.222E-03	.0501	1.515E-03	.0621	1.472E-03	.0603	2.006E-03
5	3128(175) 30.16 26.81	1.199E-03	.0491	1.488E-03	.0610	1.445E-03	.0592	1.969E-03
1	3375(175) 30.18 26.84	1.199E-03	.0491	1.487E-03	.0609	1.444E-03	.0592	1.968E-03
5	3129(175) 31.24 27.89	1.178E-03	.0483	1.461E-03	.0598	1.418E-03	.0581	1.933E-03
1	3376(175) 31.26 27.91	1.177E-03	.0482	1.460E-03	.0598	1.418E-03	.0581	1.932E-03
5	3130(175) 32.21 30.98	1.157E-03	.0474	1.432E-03	.0588	1.394E-03	.0571	1.898E-03
1	3377(175) 32.24 30.99	1.157E-03	.0474	1.434E-03	.0588	1.393E-03	.0571	1.897E-03
5	3131(175) 33.29 32.04	1.137E-03	.0466	1.411E-03	.0578	1.370E-03	.0561	1.866E-03
1	3378(175) 33.41 32.06	1.137E-03	.0466	1.410E-03	.0578	1.369E-03	.0561	1.865E-03
5	3132(175) 34.26 33.12	1.119E-03	.0458	1.388E-03	.0568	1.348E-03	.0552	1.835E-03
1	3379(175) 34.49 33.14	1.118E-03	.0458	1.387E-03	.0568	1.347E-03	.0552	1.835E-03
MODEL HAS LEFT CENTERLINE								
1	3380(175) 35.54 34.19	1.101E-03	.0451	1.366E-03	.0559	1.326E-03	.0543	1.806E-03
5	3133(175) 35.54 34.19	1.101E-03	.0451	1.366E-03	.0559	1.326E-03	.0543	1.806E-03

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 9/26/73

NASA-HI STS OH4C

AEDC(HQ-INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO MU(PSTAL) 10(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND HOLL-MODEL YAW  
 12 10 UNREITER H7 7.97 425.6 12% 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MUO-INF RE/FT HREF STREF  
 (UEG H) (PSTAL) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LB-SEC/FT<sup>2</sup>) (FI-1) (H= .0175 FT) (H= .0175 FT)  
 94.5 .045 1.986 37.7 3.964E-05 7.612E-08 1.978E 06 3.459E-04 2.894E-02

CAMERA MULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAN) T8AK(TU) BETA(TU)  
 10P(T) 6719  
 SLUT(S) 6692 350 H0 .0550 0 0

PIC NO TIME DELTIME H(TU) H(TU)/HREF H(.910) H(.910)/HREF H(.91210) H(.91210)/HREF S(10)

3 3153(350) .03 1.88 1.803E-02 .5211 2.400E-02 .6930 2.305E-02 .6662 1.477E-02  
 1 3400(350) .05 1.90 1.791E-02 .5177 2.384E-02 .6891 2.290E-02 .6618 1.467E-02  
 1 3401(350) 1.10 2.98 1.842E-02 .4138 1.908E-02 .5508 1.830E-02 .5290 1.173E-02  
 3 3157(350) .03 2.98 1.842E-02 .4138 1.908E-02 .5508 1.830E-02 .5290 1.173E-02  
 1 3405(350) .04 4.06 1.627E-02 .3547 1.634E-02 .4721 1.569E-02 .4534 1.005E-02  
 3 3159(350) .04 4.06 1.627E-02 .3547 1.634E-02 .4721 1.569E-02 .4534 1.005E-02  
 1 3406(350) .04 5.13 1.071E-02 .3153 1.452E-02 .4197 1.395E-02 .4031 8.936E-03  
 1 3406(350) .05 5.16 1.068E-02 .3145 1.449E-02 .4187 1.391E-02 .4021 8.912E-03  
 3 3160(350) 1.26 8.21 9.920E-03 .2867 1.320E-02 .3816 1.268E-02 .3665 8.123E-03  
 1 3407(350) 1.28 8.23 9.900E-03 .2861 1.316E-02 .3808 1.266E-02 .3657 8.107E-03  
 3 3161(350) 1.28 7.24 9.158E-03 .2846 1.219E-02 .3522 1.171E-02 .3383 7.498E-03  
 1 3408(350) 1.28 7.31 9.142E-03 .2842 1.217E-02 .3516 1.169E-02 .3377 7.465E-03  
 3 3162(350) 1.28 8.36 8.548E-03 .2670 1.138E-02 .3248 1.093E-02 .3158 6.998E-03  
 1 3409(350) 1.28 8.39 8.535E-03 .2668 1.136E-02 .3243 1.091E-02 .3153 6.988E-03  
 3 3163(350) 1.28 9.44 8.046E-03 .2325 1.071E-02 .3095 1.029E-02 .2972 6.587E-03  
 1 3410(350) 1.28 9.46 8.035E-03 .2322 1.070E-02 .3091 1.027E-02 .2968 6.578E-03  
 3 3164(350) 1.28 10.54 7.614E-03 .2200 1.014E-02 .2928 9.734E-03 .2812 6.232E-03  
 1 3411(350) 1.28 10.54 7.614E-03 .2200 1.014E-02 .2928 9.734E-03 .2812 6.232E-03  
 3 3165(350) 1.28 11.62 7.253E-03 .2096 9.655E-03 .2790 9.727E-03 .2680 5.941E-03

INJECT TIME = 2.40

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9/26/73

NASA-HI SYS OHAC

AEDC(HU, INC.) AMNCLD AFS, TENNESSEE

VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO POS(P)IAL IODEG K) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
12 10 UNREHEM H7 7.97 425.8 1295 29.99 .01 -30.00 180.00 .00

T-INT P-INT Q-INT V-INT W-INT MU-INT ME/FI HREF SREF  
(DEG H) (PSIAL) (FT/SEC) (IN/SEC/FI) (IN/SEC/FI) (IN/SEC/FI) (IN/SEC/FI) (IN/SEC/FI) (IN/SEC/FI)  
94.5 .045 1.927 3797 3.767E-05 7.810E-08 1.979E 06 3.440E-04 2.893E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SUWAHE MUOT (MM/ACR) TBAK(TO) REIA(TO)  
10F(T) 0519  
SLUE(S) 0692 350 H0 .0550 3.574E-01 4.494E-01

PIC NO	TIME	DELTIME	H(10)	H(10)/HREF	H(10)/HREF	H(10)/HREF	H(10)/HREF	ST(10)
1	3412(1350)	12.59	11.84	7.245E-03	2.094	9.644E-03	9.262E-03	5.934E-03
2	3166(1350)	14.04	12.69	6.932E-03	2.004	9.236E-03	8.870E-03	5.678E-03
3	3413(1350)	14.07	12.72	6.932E-03	2.003	9.236E-03	8.870E-03	5.674E-03
4	3167(1350)	15.12	13.77	6.802E-03	1.925	8.858E-03	8.517E-03	5.454E-03
5	3414(1350)	15.14	13.79	6.802E-03	1.923	8.858E-03	8.517E-03	5.449E-03
6	3168(1350)	16.19	14.84	6.410E-03	1.853	8.540E-03	8.202E-03	5.250E-03
7	3415(1350)	16.22	14.87	6.410E-03	1.852	8.533E-03	8.195E-03	5.244E-03
8	3169(1350)	17.29	15.95	6.190E-03	1.788	8.240E-03	7.914E-03	5.065E-03
9	3170(1350)	18.25	17.00	5.995E-03	1.732	7.981E-03	7.685E-03	4.907E-03
10	3417(1350)	18.27	17.02	5.995E-03	1.731	7.975E-03	7.680E-03	4.902E-03
11	3171(1350)	19.42	18.07	5.815E-03	1.679	7.740E-03	7.433E-03	4.756E-03
12	3418(1350)	19.45	18.10	5.810E-03	1.678	7.735E-03	7.428E-03	4.752E-03
13	3172(1350)	20.20	19.15	5.649E-03	1.632	7.519E-03	7.222E-03	4.621E-03
14	3419(1350)	20.22	19.17	5.645E-03	1.631	7.514E-03	7.217E-03	4.618E-03
15	3173(1350)	21.40	20.25	5.433E-03	1.587	7.312E-03	7.022E-03	4.494E-03
16	3420(1350)	21.42	20.28	5.430E-03	1.586	7.307E-03	7.018E-03	4.491E-03
17	3174(1350)	22.08	21.33	5.353E-03	1.546	7.125E-03	6.843E-03	4.379E-03
18	3421(1350)	22.10	21.35	5.349E-03	1.545	7.121E-03	6.839E-03	4.376E-03
19	3175(1350)	23.15	22.43	5.222E-03	1.508	6.952E-03	6.677E-03	4.271E-03
20	3422(1350)	23.18	22.43	5.220E-03	1.508	6.948E-03	6.673E-03	4.269E-03
21	3176(1350)	24.03	23.48	5.101E-03	1.474	6.791E-03	6.522E-03	4.173E-03
22	3423(1350)	24.05	23.50	5.099E-03	1.473	6.787E-03	6.518E-03	4.170E-03
23	3177(1350)	25.50	24.56	4.988E-03	1.441	6.640E-03	6.377E-03	4.080E-03
24	3424(1350)	25.53	24.58	4.986E-03	1.440	6.637E-03	6.374E-03	4.078E-03

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9126173

AEUC (AHO, INC.) ANNULU AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	MODEL	MACH NO	POISSON	TOUGH HJ	ALPHA=MODEL	ALPHA=SECTION	ALPHA=PREBEND	ROLL-MODEL	YAW
12	10	UNELLEN #7	1.97	426.4	1255	29.99	.01	-30.00	180.00	.00

T=INF	P={INF	Q={INF	V={INF	MH={INF	MU={INF	HF/F=1	MKEF	SINEF
(066 H)	(P21A7)	(P51A7)	(P175E7)	(S1057E13)	(LH=3E7E12)	(F1=1)	(K= .0175F1)	(K= .0175F1)
Y4.5	.045	1.990	3797	3.974E=05	7.609E=08	1.583E 06	3.462E=02	2.891E=02

CAMERA	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUACAK)	TBAK(TU)	BETA(TO)
104(1)	6519					
516E(2)	6692	350	80	.0550	3.574E-01	4.4944E-

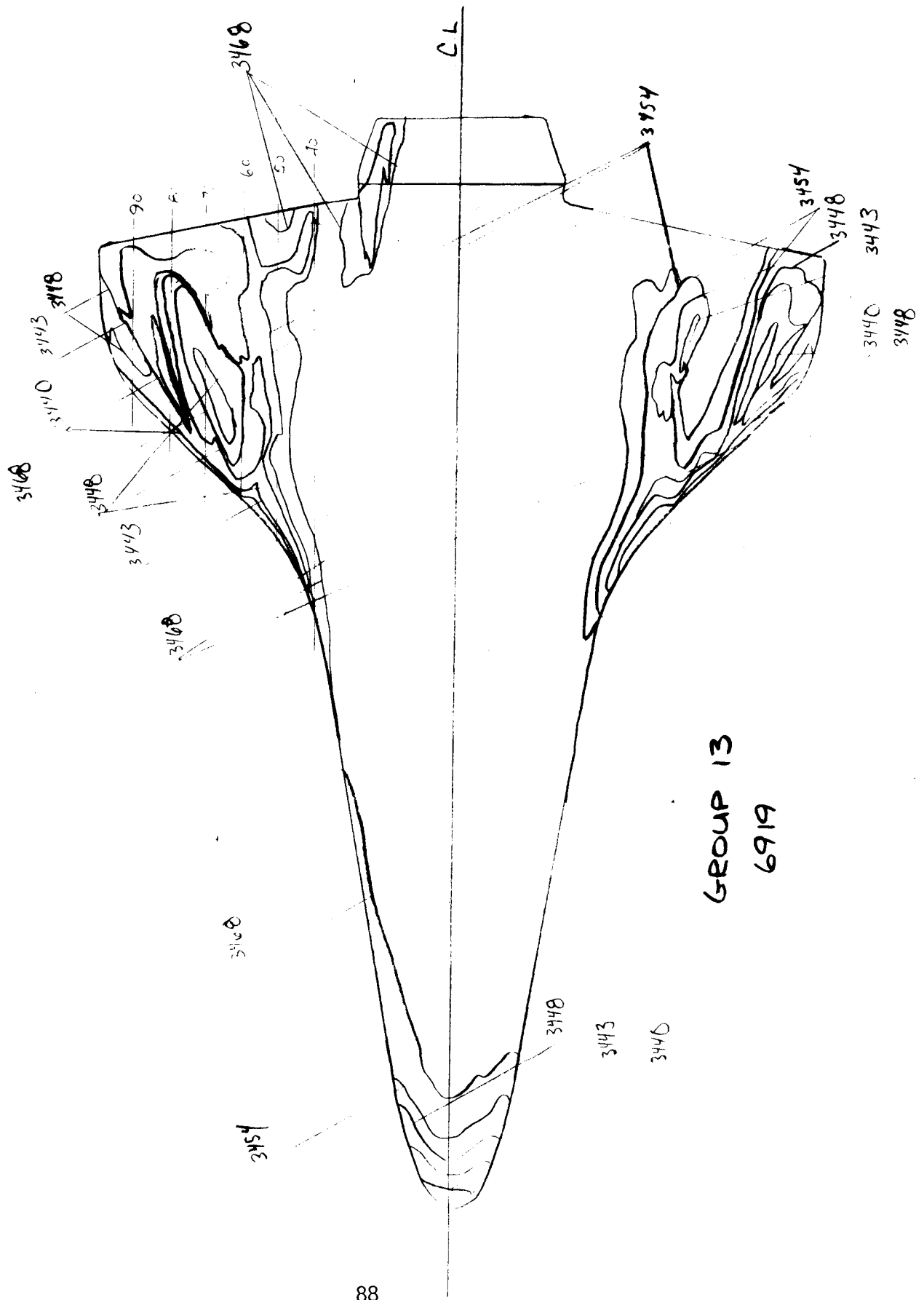
PIC NO.	LINE	DECLINE	M(10)	M(10)/HREF	M(-910)	M(-910)/HREF	M(-91210)	H(-91210)/HREF	ST(10)
3	3178(1350)	26.58	4.862E-03	.1410	6.495E-03	.1878	6.262E-03	.1803	3.995E-03
3	3425(1350)	27.61	4.860E-03	.1410	6.496E-03	.1876	6.259E-03	.1802	3.992E-03
3	3174(1350)	26.06	4.783E-03	.1381	6.367E-03	.1839	6.115E-03	.1766	3.912E-03
3	3426(1350)	26.18	4.761E-03	.1381	6.364E-03	.1838	6.112E-03	.1765	3.910E-03
3	3180(1350)	27.11	4.692E-03	.1355	6.245E-03	.1804	5.998E-03	.1733	3.838E-03
3	3427(1350)	27.13	4.690E-03	.1354	6.242E-03	.1803	5.995E-03	.1732	3.835E-03
3	3181(1350)	30.18	4.603E-03	.1330	6.128E-03	.1770	5.895E-03	.1700	3.766E-03
3	3428(1350)	30.21	4.601E-03	.1329	6.125E-03	.1770	5.892E-03	.1700	3.766E-03
3	3429(1350)	31.26	4.520E-03	.1306	6.016E-03	.1738	5.778E-03	.1669	3.697E-03
3	3182(1350)	31.29	4.518E-03	.1305	6.014E-03	.1737	5.776E-03	.1668	3.695E-03
3	3430(1350)	32.26	4.439E-03	.1277	5.909E-03	.1700	5.675E-03	.1633	3.603E-03
3	3183(1350)	32.26	4.439E-03	.1277	5.909E-03	.1700	5.675E-03	.1633	3.603E-03
3	3431(1350)	33.46	4.309E-03	.1260	5.809E-03	.1678	5.579E-03	.1611	3.569E-03
3	3184(1350)	33.44	4.306E-03	.1260	5.809E-03	.1678	5.579E-03	.1611	3.569E-03
3	3185(1350)	34.21	4.292E-03	.1240	5.809E-03	.1678	5.579E-03	.1611	3.569E-03
3	3432(1350)	34.21	4.292E-03	.1240	5.809E-03	.1678	5.579E-03	.1611	3.569E-03
3	3186(1350)	34.21	4.292E-03	.1240	5.809E-03	.1678	5.579E-03	.1611	3.569E-03
3	3433(1350)	34.21	4.292E-03	.1240	5.809E-03	.1678	5.579E-03	.1611	3.569E-03

MODEL HAS LEFT CENTERLINE

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comp 13  
6919  
ms



GROUP 13  
6919

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7/26/73

NASA-HI STS 0M4C

AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO PO(P51A) IO(LEG M) ALPHA-MODEL ALPHA-SECTION ALPHA-PREPEND ROLL-MODEL YAW  
 13 2 CHEITEM S 7.97 424.3 1289 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF W-INF HREF ME/FI HREF S/HREF  
 1026 M1 (P51A) (F1/SEC) (SLUGS/L13) (L1-L1) (KE .0175E1) (KE .0175E1)  
 94.0 .043 1.990 37.7 3.974E-05 7.571E-08 1.588E 06 3.451E-02 2.889E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/CACAK) TBAH(10) BETA(10)  
 TOP(1) 6919  
 SIDE(S) 6492 350 81 .0550 0 0

PIC NO TIME DELTIME H(10) H(10)/HREF H(10) H(10)/HREF M(10) M(10)/HREF ST(10)  
 3 3187(350) .05 MODEL HAS NOT REACHED CENTERLINE .6955 2.318E-02 .6715 1.482E-02  
 1 3435(350) .04 MODEL HAS NOT REACHED CENTERLINE .6449 2.303E-02 .6670 1.472E-02  
 3 3188(350) 1.10 MODEL HAS NOT REACHED CENTERLINE .5593 1.920E-02 .5369 1.185E-02  
 1 3436(350) 1.13 MODEL HAS NOT REACHED CENTERLINE .5570 1.845E-02 .5347 1.180E-02  
 3 3189(350) 2.18 MODEL HAS NOT REACHED CENTERLINE .4793 1.588E-02 .4602 1.016E-02  
 1 3437(350) 2.20 MODEL HAS NOT REACHED CENTERLINE .4778 1.584E-02 .4587 1.012E-02  
 3 3190(350) 3.25 MODEL HAS NOT REACHED CENTERLINE .4261 1.412E-02 .4090 9.027E-03  
 1 3438(350) 3.28 MODEL HAS NOT REACHED CENTERLINE .4251 1.409E-02 .4040 9.005E-03  
 3 3191(350) 4.21 MODEL HAS NOT REACHED CENTERLINE .3857 1.281E-02 .3712 8.193E-03  
 1 3439(350) 4.24 MODEL HAS NOT REACHED CENTERLINE .3854 1.279E-02 .3705 8.176E-03  
 3 3192(350) 5.24 MODEL HAS NOT REACHED CENTERLINE .3571 1.103E-02 .3428 7.564E-03  
 1 3440(350) 5.27 MODEL HAS NOT REACHED CENTERLINE .3570 1.101E-02 .3422 7.551E-03  
 3 3193(350) 6.24 MODEL HAS NOT REACHED CENTERLINE .3333 1.105E-02 .3200 7.060E-03  
 1 3441(350) 6.27 MODEL HAS NOT REACHED CENTERLINE .3328 1.103E-02 .3195 7.048E-03  
 3 3194(350) 7.24 MODEL HAS NOT REACHED CENTERLINE .3138 1.030E-02 .3012 6.647E-03  
 1 3442(350) 7.27 MODEL HAS NOT REACHED CENTERLINE .3134 1.039E-02 .3008 6.638E-03  
 3 3195(350) 8.21 MODEL HAS NOT REACHED CENTERLINE .2970 9.844E-03 .2851 6.291E-03  
 1 3443(350) 8.24 MODEL HAS NOT REACHED CENTERLINE .2970 9.844E-03 .2851 6.291E-03  
 3 3196(350) 9.21 MODEL HAS NOT REACHED CENTERLINE .2830 9.374E-03 .2716 5.994E-03  
 1 3444(350) 9.24 MODEL HAS NOT REACHED CENTERLINE .2830 9.374E-03 .2716 5.994E-03

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9126173

NASA-HI SIS (H4C

AFEC(AMU,INC.) AMNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL W

VA 352

GROUP	CONFIG	MODEL	MACH NO	W(PSIA)	T(LEG M)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	KOLL-MODEL	YAW
13	2	CHEILCM S	7.97	424.7	1268	29.99	.01	-30.00	180.00	.00

1-INT	2-INT	3-INT	4-INT	5-INT	6-INT	7-INT	8-INT	9-INT	10-INT	11-INT	12-INT	13-INT	14-INT	15-INT	16-INT	17-INT	18-INT	19-INT	20-INT	21-INT	22-INT	23-INT	24-INT	25-INT	26-INT	27-INT	28-INT	29-INT	30-INT	31-INT	32-INT	33-INT	34-INT	35-INT	36-INT	37-INT	38-INT	39-INT	40-INT	41-INT	42-INT	43-INT	44-INT	45-INT	46-INT	47-INT	48-INT	49-INT	50-INT	51-INT	52-INT	53-INT	54-INT	55-INT	56-INT	57-INT	58-INT	59-INT	60-INT	61-INT	62-INT	63-INT	64-INT	65-INT	66-INT	67-INT	68-INT	69-INT	70-INT	71-INT	72-INT	73-INT	74-INT	75-INT	76-INT	77-INT	78-INT	79-INT	80-INT	81-INT	82-INT	83-INT	84-INT	85-INT	86-INT	87-INT	88-INT	89-INT	90-INT	91-INT	92-INT	93-INT	94-INT	95-INT	96-INT	97-INT	98-INT	99-INT	100-INT	101-INT	102-INT	103-INT	104-INT	105-INT	106-INT	107-INT	108-INT	109-INT	110-INT	111-INT	112-INT	113-INT	114-INT	115-INT	116-INT	117-INT	118-INT	119-INT	120-INT	121-INT	122-INT	123-INT	124-INT	125-INT	126-INT	127-INT	128-INT	129-INT	130-INT	131-INT	132-INT	133-INT	134-INT	135-INT	136-INT	137-INT	138-INT	139-INT	140-INT	141-INT	142-INT	143-INT	144-INT	145-INT	146-INT	147-INT	148-INT	149-INT	150-INT	151-INT	152-INT	153-INT	154-INT	155-INT	156-INT	157-INT	158-INT	159-INT	160-INT	161-INT	162-INT	163-INT	164-INT	165-INT	166-INT	167-INT	168-INT	169-INT	170-INT	171-INT	172-INT	173-INT	174-INT	175-INT	176-INT	177-INT	178-INT	179-INT	180-INT	181-INT	182-INT	183-INT	184-INT	185-INT	186-INT	187-INT	188-INT	189-INT	190-INT	191-INT	192-INT	193-INT	194-INT	195-INT	196-INT	197-INT	198-INT	199-INT	200-INT	201-INT	202-INT	203-INT	204-INT	205-INT	206-INT	207-INT	208-INT	209-INT	210-INT	211-INT	212-INT	213-INT	214-INT	215-INT	216-INT	217-INT	218-INT	219-INT	220-INT	221-INT	222-INT	223-INT	224-INT	225-INT	226-INT	227-INT	228-INT	229-INT	230-INT	231-INT	232-INT	233-INT	234-INT	235-INT	236-INT	237-INT	238-INT	239-INT	240-INT	241-INT	242-INT	243-INT	244-INT	245-INT	246-INT	247-INT	248-INT	249-INT	250-INT	251-INT	252-INT	253-INT	254-INT	255-INT	256-INT	257-INT	258-INT	259-INT	260-INT	261-INT	262-INT	263-INT	264-INT	265-INT	266-INT	267-INT	268-INT	269-INT	270-INT	271-INT	272-INT	273-INT	274-INT	275-INT	276-INT	277-INT	278-INT	279-INT	280-INT	281-INT	282-INT	283-INT	284-INT	285-INT	286-INT	287-INT	288-INT	289-INT	290-INT	291-INT	292-INT	293-INT	294-INT	295-INT	296-INT	297-INT	298-INT	299-INT	300-INT	301-INT	302-INT	303-INT	304-INT	305-INT	306-INT	307-INT	308-INT	309-INT	310-INT	311-INT	312-INT	313-INT	314-INT	315-INT	316-INT	317-INT	318-INT	319-INT	320-INT	321-INT	322-INT	323-INT	324-INT	325-INT	326-INT	327-INT	328-INT	329-INT	330-INT	331-INT	332-INT	333-INT	334-INT	335-INT	336-INT	337-INT	338-INT	339-INT	340-INT	341-INT	342-INT	343-INT	344-INT	345-INT	346-INT	347-INT	348-INT	349-INT	350-INT	351-INT	352-INT	353-INT	354-INT	355-INT	356-INT	357-INT	358-INT	359-INT	360-INT	361-INT	362-INT	363-INT	364-INT	365-INT	366-INT	367-INT	368-INT	369-INT	370-INT	371-INT	372-INT	373-INT	374-INT	375-INT	376-INT	377-INT	378-INT	379-INT	380-INT	381-INT
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CAMERA

MULL INU	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE HOOT (MHUACAK)	THAN(TO)	BETA(TO)
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692	350	81	•0550	3.59YE-01	4.5340E-01
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PIC NO.	TIME	DELTIME	M(10)	M(10)/HREF	M(.910)	M(.910)/HREF	M(.912U)	HI .912101/HREF	ST(101)
3447(350)	13.01	11.67	7.309E-03	.2117	9.758E-03	.2227	9.367E-03	.2713	5.988E-03
3200(350)	19.07	12.72	7.000E-03	.2028	9.346E-03	.2708	8.972E-03	.2599	5.736E-03
3446(350)	14.09	12.74	6.999E-03	.2026	9.337E-03	.2705	8.963E-03	.2597	5.730E-03
3201(350)	15.14	13.74	6.722E-03	.1948	8.978E-03	.2600	8.615E-03	.2486	5.509E-03
3449(350)	15.17	13.82	6.716E-03	.1946	8.966E-03	.2598	8.607E-03	.2494	5.504E-03
3450(350)	16.24	14.89	5.409E-03	.1674	6.535E-03	.2502	8.270E-03	.2601	5.299E-03
3202(350)	16.24	14.89	6.409E-03	.1874	8.638E-03	.2502	8.290E-03	.2601	5.299E-03
3203(350)	17.32	15.97	6.247E-03	.1809	8.340E-03	.2416	8.006E-03	.2319	5.116E-03
3451(350)	17.34	16.00	6.242E-03	.1808	8.333E-03	.2413	8.000E-03	.2317	5.111E-03
3204(350)	18.40	17.05	6.040E-03	.1752	8.072E-03	.2339	7.749E-03	.2245	4.854E-03
3452(350)	18.42	17.07	6.042E-03	.1750	8.066E-03	.2337	7.744E-03	.2243	4.850E-03
3205(350)	19.47	18.12	5.804E-03	.1698	7.829E-03	.2268	7.516E-03	.2177	4.803E-03
3453(350)	19.50	18.15	5.800E-03	.1697	7.824E-03	.2266	7.510E-03	.2175	4.799E-03
3454(350)	20.57	19.22	5.674E-03	.1649	7.602E-03	.2201	7.297E-03	.2113	4.662E-03
3206(350)	20.57	19.22	5.674E-03	.1649	7.602E-03	.2201	7.297E-03	.2113	4.662E-03
3207(350)	21.25	20.30	5.551E-03	.1605	7.347E-03	.2143	7.101E-03	.2057	4.537E-03
3455(350)	21.67	20.33	5.537E-03	.1604	7.339E-03	.2141	7.097E-03	.2055	4.534E-03
3208(350)	22.03	21.38	5.399E-03	.1564	7.209E-03	.2088	6.920E-03	.2004	4.422E-03
3456(350)	22.05	21.40	5.396E-03	.1563	7.204E-03	.2086	6.916E-03	.2003	4.418E-03
3457(350)	23.50	22.45	5.209E-03	.1526	7.034E-03	.2037	6.752E-03	.1956	4.315E-03
3209(350)	23.53	22.44	5.208E-03	.1525	7.030E-03	.2036	6.749E-03	.1954	4.311E-03
3458(350)	24.28	24.53	5.137E-03	.1491	6.871E-03	.1990	6.552E-03	.1910	4.215E-03
3210(350)	24.50	24.55	5.146E-03	.1490	6.867E-03	.1989	6.549E-03	.1909	4.212E-03
3459(350)	25.58	24.63	5.030E-03	.1457	6.716E-03	.1945	6.477E-03	.1867	4.118E-03
3211(350)	25.58	24.63	5.030E-03	.1457	6.716E-03	.1945	6.477E-03	.1867	4.118E-03

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VA352

AEUC (AMC, INC.) ANNULUS AFS, TENNESSEE  
YUN KAHMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	MODEL	MACH NO	PO(PSLA)	TO(UG K)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	KOLL-MODEL	YAW
13	2	UREITEM S	7.97	424.9	1268	29.99	.01	-30.00	180.00	.00

1-INF	μ=INT	σ=INT	σ=INT	μ=INT	σ=INT	μ=INT	σ=INT	μ=INT	σ=INT
94.0	0.942	1.993	3786	3.982E+05	1.993E 06	3.453E-02	2.886E-02	0.175F11	0.175F11

ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HOURS)	TEMP (TU)	HEAT (TU)
1	100	100	1.0	100	100
2	100	100	1.0	100	100
3	100	100	1.0	100	100
4	100	100	1.0	100	100
5	100	100	1.0	100	100
6	100	100	1.0	100	100
7	100	100	1.0	100	100
8	100	100	1.0	100	100
9	100	100	1.0	100	100
10	100	100	1.0	100	100
11	100	100	1.0	100	100
12	100	100	1.0	100	100
13	100	100	1.0	100	100
14	100	100	1.0	100	100
15	100	100	1.0	100	100
16	100	100	1.0	100	100
17	100	100	1.0	100	100
18	100	100	1.0	100	100
19	100	100	1.0	100	100
20	100	100	1.0	100	100
21	100	100	1.0	100	100
22	100	100	1.0	100	100
23	100	100	1.0	100	100
24	100	100	1.0	100	100
25	100	100	1.0	100	100
26	100	100	1.0	100	100
27	100	100	1.0	100	100
28	100	100	1.0	100	100
29	100	100	1.0	100	100
30	100	100	1.0	100	100
31	100	100	1.0	100	100
32	100	100	1.0	100	100
33	100	100	1.0	100	100
34	100	100	1.0	100	100
35	100	100	1.0	100	100
36	100	100	1.0	100	100
37	100	100	1.0	100	100
38	100	100	1.0	100	100
39	100	100	1.0	100	100
40	100	100	1.0	100	100
41	100	100	1.0	100	100
42	100	100	1.0	100	100
43	100	100	1.0	100	100
44	100	100	1.0	100	100
45	100	100	1.0	100	100
46	100	100	1.0	100	100
47	100	100	1.0	100	100
48	100	100	1.0	100	100
49	100	100	1.0	100	100
50	100	100	1.0	100	100
51	100	100	1.0	100	100
52	100	100	1.0	100	100
53	100	100	1.0	100	100
54	100	100	1.0	100	100
55	100	100	1.0	100	100
56	100	100	1.0	100	100
57	100	100	1.0	100	100
58	100	100	1.0	100	100
59	100	100	1.0	100	100
60	100	100	1.0	100	100
61	100	100	1.0	100	100
62	100	100	1.0	100	100
63	100	100	1.0	100	100
64	100	100	1.0	100	100
65	100	100	1.0	100	100
66	100	100	1.0	100	100
67	100	100	1.0	100	100

[illegible]

PIC NO	TIME	DELTIME	M(10)	M(10)/HREF	M(•910)	M(•910)/HREF	M(•91210)	M(•91210)/HREF	ST(10)
3460(1350)	25.66	25.71	4.924E-03	.1426	6.544E-03	.1904	6.310E-03	.1828	4.031E-03
3216(1350)	25.66	25.71	4.924E-03	.1426	6.544E-03	.1904	6.310E-03	.1828	4.031E-03
3213(1350)	28.13	25.74	4.824E-03	.1397	6.440E-03	.1865	6.182E-03	.1791	3.949E-03
3401(1350)	25.16	25.81	4.822E-03	.1396	6.437E-03	.1864	6.179E-03	.1790	3.947E-03
3214(1350)	25.21	25.86	4.730E-03	.1370	6.315E-03	.1829	6.062E-03	.1756	3.813E-03
3402(1350)	25.23	25.88	4.729E-03	.1369	6.312E-03	.1828	6.059E-03	.1755	3.811E-03
3215(1350)	30.28	26.94	4.641E-03	.1344	6.196E-03	.1794	5.948E-03	.1723	3.800E-03
3403(1350)	30.23	25.96	4.639E-03	.1344	6.193E-03	.1794	5.945E-03	.1722	3.798E-03
3216(1350)	31.26	30.01	4.557E-03	.1320	6.084E-03	.1762	5.840E-03	.1692	3.731E-03
3404(1350)	31.29	30.04	4.555E-03	.1319	6.081E-03	.1761	5.838E-03	.1691	3.730E-03
3405(1350)	32.46	31.11	4.476E-03	.1296	5.975E-03	.1731	5.738E-03	.1661	3.664E-03
3217(1350)	32.46	31.11	4.474E-03	.1296	5.975E-03	.1731	5.736E-03	.1661	3.664E-03
3406(1350)	33.54	32.19	4.400E-03	.1274	5.875E-03	.1702	5.639E-03	.1633	3.603E-03
3218(1350)	33.54	32.19	4.400E-03	.1274	5.875E-03	.1702	5.639E-03	.1633	3.603E-03
3219(1350)	34.51	33.27	4.324E-03	.1254	5.779E-03	.1674	5.547E-03	.1607	3.544E-03
3407(1350)	34.54	33.29	4.322E-03	.1253	5.777E-03	.1673	5.545E-03	.1606	3.542E-03
3220(1350)	35.59	34.34	4.260E-03	.1234	5.687E-03	.1647	5.480E-03	.1581	3.448E-03
3408(1350)	35.62	34.37	4.258E-03	.1234	5.685E-03	.1647	5.478E-03	.1581	3.448E-03
35.69									
3409(1350)	36.69	35.44	4.193E-03	.1214	5.598E-03	.1621	5.374E-03	.1556	3.432E-03
3221(1350)	36.69	35.44	4.193E-03	.1214	5.598E-03	.1621	5.374E-03	.1556	3.432E-03
3222(1350)	37.27	36.52	4.111E-03	.1196	5.515E-03	.1597	5.294E-03	.1533	3.382E-03
3410(1350)	37.29	36.54	4.130E-03	.1196	5.513E-03	.1597	5.294E-03	.1533	3.381E-03



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9/26/73

NASA-RI STS OM4C

VA352

AEDC (ARL INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO POI (PSIA) TO (DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND HOLL-MODEL YAW  
 14 9 UNCLIFER H6 7.97 423.5 1285 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF W-INF MU-INF ME/FT MREF SINEF  
 (DEG H) (PSIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LH-SEC/FT<sup>2</sup>) (FT-1) (IN-0.0175FT) (IN-0.0175FT)  
 93.7 .004 1.97E 3761 3.97EE-05 7.547E-08 1.593E 06 3.445E-02 2.887E-02

CAMERA HULL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/ACAN) TBAH(TO) BEFA(TO)

10P(T) 6919  
 SIDE(S) 6C92 350 81 .0550 0 0

PIC NO	TIME DELTIME	HIJ01	HIJ01/HREF	HL-9101	HL-9101/HREF	HL-912101	HL-912101/HREF	SI(110)
3223(1350)	.05	MODEL HAS NOT REACHED CENTERLINE	5308	2.446E-02	.7098	2.347E-02	.6612	1.501E-02
3471(1350)	.08	MODEL HAS NOT REACHED CENTERLINE	.5273	2.430E-02	.7052	2.332E-02	.6767	1.491E-02
3224(1350)	1.10	MODEL HAS NOT REACHED CENTERLINE	1.434E-02	.4219	.4562	1.808E-02	.5414	1.193E-02
3472(1350)	1.13	MODEL HAS NOT REACHED CENTERLINE	1.474E-02	.4219	.5642	1.808E-02	.5414	1.193E-02
3225(1350)	2.18	MODEL HAS NOT REACHED CENTERLINE	1.247E-02	.3618	.4839	1.600E-02	.4643	1.023E-02
3473(1350)	2.20	MODEL HAS NOT REACHED CENTERLINE	1.167E-02	.3218	.4303	1.623E-02	.4130	9.098E-03
INJECT TIME = 2.43								
3226(1350)	3.45	1.029E-02	.4226	1.348E-02	.3913	1.244E-02	.3755	8.272E-03
3474(1350)	3.48	1.000E-02	.4220	1.346E-02	.3905	1.241E-02	.3748	8.255E-03
3227(1350)	4.26	9.295E-03	.2676	1.243E-02	.3606	1.193E-02	.3460	7.621E-03
3475(1350)	4.29	9.295E-03	.2676	1.243E-02	.3606	1.193E-02	.3460	7.621E-03
3228(1350)	5.43	8.679E-03	.2518	1.161E-02	.3367	1.114E-02	.3231	7.116E-03
3476(1350)	5.47	8.666E-03	.2514	1.159E-02	.3362	1.112E-02	.3226	7.106E-03
3229(1350)	6.21	8.111E-03	.2310	1.094E-02	.3170	1.049E-02	.3042	6.700E-03
3477(1350)	6.22	8.100E-03	.2307	1.091E-02	.3166	1.047E-02	.3038	6.691E-03
3230(1350)	7.01	7.744E-03	.2243	1.034E-02	.3000	9.925E-03	.2879	6.340E-03
3478(1350)	7.02	7.744E-03	.2243	1.034E-02	.3000	9.925E-03	.2879	6.340E-03
3231(1350)	7.79	7.368E-03	.2148	9.853E-03	.2859	9.425E-03	.2744	6.044E-03
3479(1350)	7.84	7.368E-03	.2148	9.853E-03	.2859	9.425E-03	.2744	6.044E-03

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 5/26/73

NASA-HI STS OMHC  
 AEDC (AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VJ352

GROUP CONFIG MODEL MALM NO PO (PSIA) TO (DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 14 9 CHESTER #6 1.97 423.7 1285 29.99 .01 -30.00 180.00 .00

T-INF P-INF W-INF V-INF HNU-INF MU-INF ME/FT HREF SINEF  
 10 (G R) (PSIA) (PSIA) (PSIA) (SLUGS/FT<sup>3</sup>) (LBS-SLUG/FT<sup>3</sup>) (EI=1) (ME=.0175EI) (ME=.0175EI)  
 93.7 .044 1.977 37.61 3.480E-05 7.546E-06 1.594E 06 3.446E-02 2.806E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/SEC) TBAK (TO) BETA (TO)  
 10 (T) 6414  
 SLUG (S) 6692 350 #1 .0550 3.01E-01 4.5728E-01

PIC NO	TIME	DELTIME	H (10)	H (10)/HREF	H (.910)	H (.910)/HREF	H (.91210)	H (.91210)/HREF	ST (10)
1 3493 (350)	13.04	11.64	7.300E-03	.2135	9.842E-03	.2856	9.443E-03	.2740	6.036E-03
1 3236 (350)	13.09	12.73	7.049E-03	.2045	9.427E-03	.2624	9.047E-03	.2624	5.777E-03
1 3484 (350)	13.12	12.75	7.043E-03	.2043	9.416E-03	.2732	9.038E-03	.2621	5.772E-03
1 3237 (350)	13.17	13.80	6.709E-03	.1963	9.052E-03	.2825	8.687E-03	.2520	5.548E-03
1 3485 (350)	13.19	13.83	6.703E-03	.1962	9.046E-03	.2823	8.679E-03	.2517	5.543E-03
1 3486 (350)	13.27	14.91	6.514E-03	.1889	8.711E-03	.2527	8.360E-03	.2425	5.339E-03
1 3238 (350)	13.27	14.91	6.514E-03	.1889	8.711E-03	.2527	8.360E-03	.2425	5.339E-03
1 3487 (350)	17.24	15.98	6.291E-03	.1825	8.413E-03	.2441	8.073E-03	.2342	5.158E-03
1 3239 (350)	17.34	15.98	6.291E-03	.1825	8.413E-03	.2441	8.073E-03	.2342	5.158E-03
1 3240 (350)	18.42	17.05	6.069E-03	.1765	8.143E-03	.2362	7.815E-03	.2266	4.989E-03
1 3488 (350)	18.45	17.05	6.069E-03	.1765	8.143E-03	.2362	7.815E-03	.2266	4.989E-03
1 3241 (350)	18.50	18.13	5.908E-03	.1713	7.848E-03	.2290	7.579E-03	.2198	4.838E-03
1 3489 (350)	18.52	18.16	5.902E-03	.1711	7.842E-03	.2289	7.574E-03	.2196	4.835E-03
1 3242 (350)	20.57	19.21	5.736E-03	.1684	7.619E-03	.2225	7.364E-03	.2135	4.701E-03
1 3490 (350)	20.60	19.24	5.734E-03	.1683	7.608E-03	.2224	7.359E-03	.2134	4.698E-03
1 3243 (350)	21.65	20.29	5.564E-03	.1619	7.467E-03	.2165	7.166E-03	.2078	4.574E-03
1 3491 (350)	21.67	20.31	5.560E-03	.1618	7.462E-03	.2164	7.161E-03	.2077	4.571E-03
1 3492 (350)	22.75	21.39	5.438E-03	.1577	7.272E-03	.2108	6.979E-03	.2023	4.454E-03
1 3244 (350)	22.75	21.39	5.438E-03	.1577	7.272E-03	.2108	6.979E-03	.2023	4.454E-03
1 3245 (350)	23.03	22.46	5.306E-03	.1539	7.096E-03	.2057	6.810E-03	.1974	4.346E-03
1 3493 (350)	23.05	22.49	5.303E-03	.1538	7.092E-03	.2056	6.806E-03	.1973	4.344E-03
1 3246 (350)	24.20	24.54	5.164E-03	.1503	6.932E-03	.2010	6.652E-03	.1928	4.245E-03
1 3494 (350)	24.53	23.57	5.161E-03	.1502	6.928E-03	.2008	6.649E-03	.1927	4.242E-03
1 3247 (350)	24.58	24.62	5.009E-03	.1470	6.718E-03	.1966	6.505E-03	.1886	4.153E-03
1 3495 (350)	24.60	24.64	5.006E-03	.1469	6.715E-03	.1964	6.502E-03	.1885	4.149E-03

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9/26/73

NASA-HI STS CM4C  
 VA352  
 AEDCTAO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH PIPE/SONIC TUNNEL H

GROUP CONFIG MODEL MACH NO P(PSIA) (U/DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 14 9 CHESTER M6 7.97 424.3 1285 24.99 .01 -30.00 100.00 .00

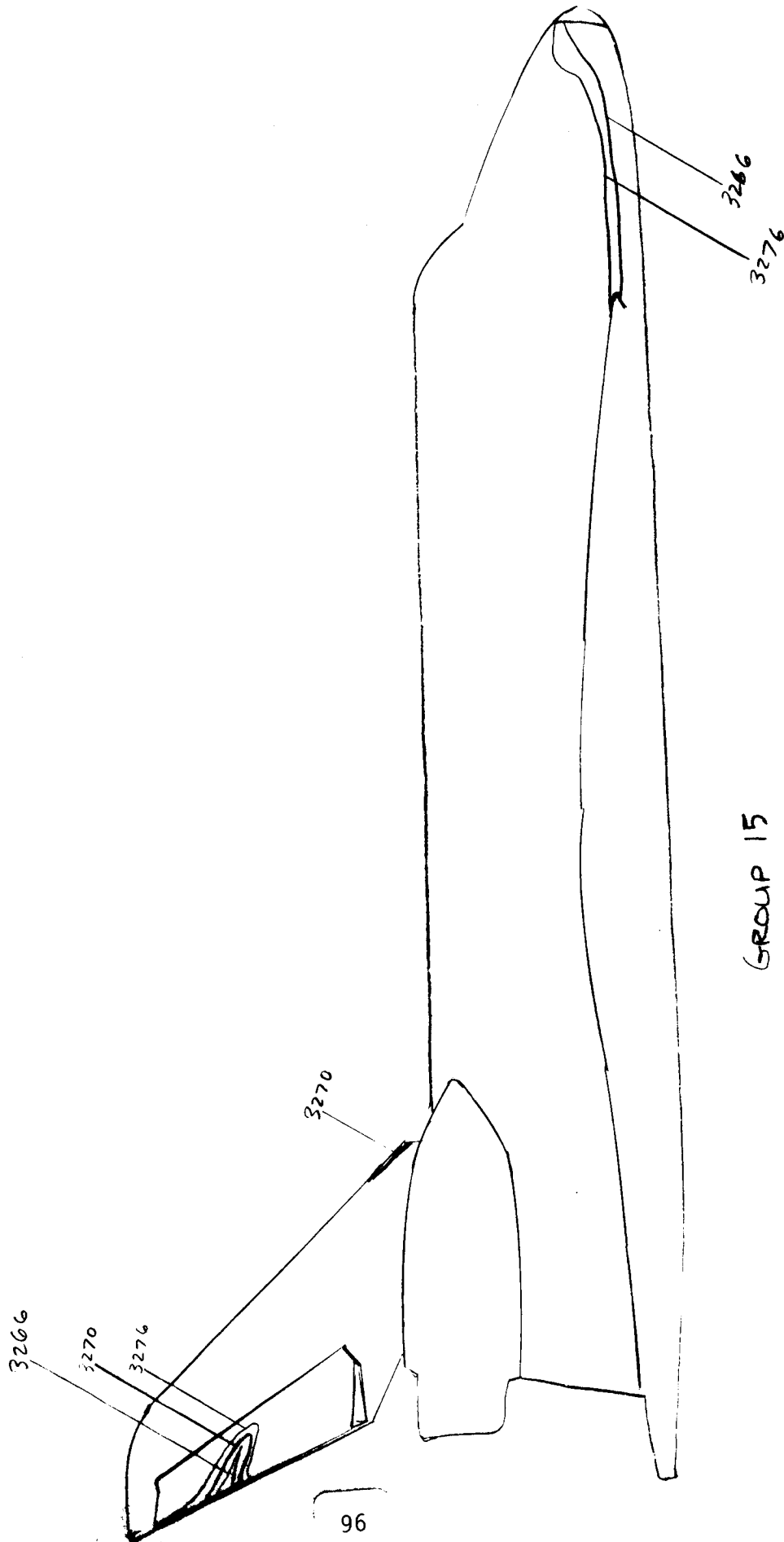
T-INF P-INF U-INF V-INF MU-INF ME/FI HREF STREF  
 (U/DEG H) (PSIA) (PSIA) (I/I/SEC) (SLURS/FI) (LR-SEU/EI2) (FI-I) (H= .0175F) (H= .0175FI)  
 93.7 .045 1.480 37.01 3.986E-05 7.54E-08 1.997E 06 3.449E-02 2.884E-02

CAPEKA ROLL NO PAINT TEMP (U/DEG F) INITIAL TEMP (U/DEG F) SQUARE ROOT (RMOUACAK) TBAK(TO) BETA(TO)  
 10P(TT) 0419  
 SIDE(S) 0592 350 81 .0550 3.017E-01 4.5728E-01

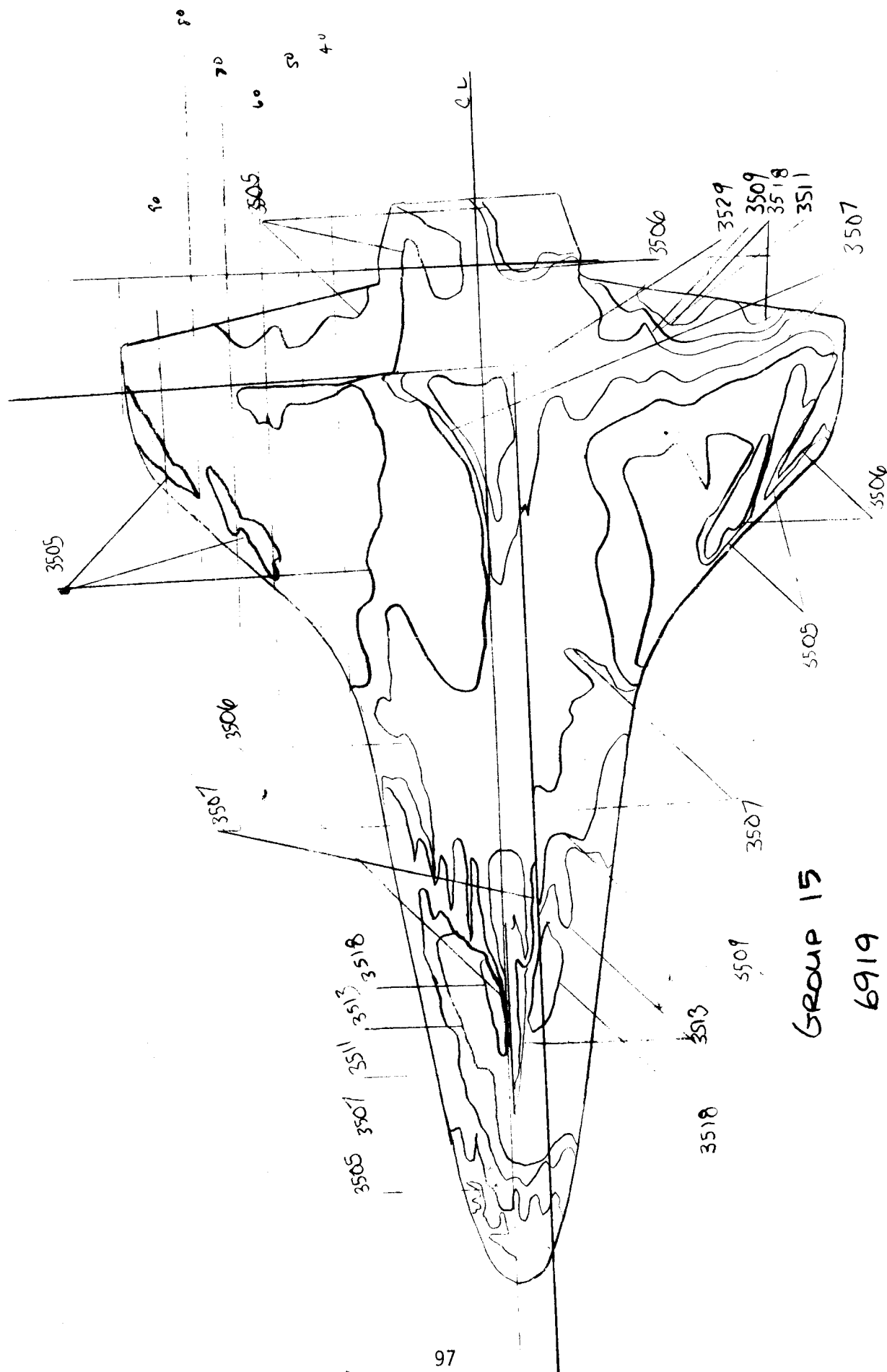
PIC NO	TIME DELTIME	M(IIO)	M(TO)/HREF	ML(910)	ML(910)/HREF	ML(91210)	ML(91210)/HREF	ST(10)
3248(350)	27.66	4.962E-03	.1439	6.635E-03	.1924	6.307E-03	.1846	4.065E-03
3496(350)	27.68	4.959E-03	.1438	6.632E-03	.1923	6.304E-03	.1845	4.063E-03
3497(350)	28.79	4.859E-03	.1408	6.497E-03	.1883	6.235E-03	.1807	3.977E-03
3249(350)	28.16	4.835E-03	.1408	6.497E-03	.1883	6.235E-03	.1807	3.977E-03
3498(350)	27.85	4.706E-03	.1381	6.373E-03	.1847	6.110E-03	.1773	3.901E-03
3250(350)	27.87	4.704E-03	.1381	6.371E-03	.1846	6.114E-03	.1772	3.899E-03
3499(350)	28.95	4.675E-03	.1355	6.251E-03	.1812	5.999E-03	.1739	3.826E-03
3251(350)	28.95	4.675E-03	.1355	6.251E-03	.1812	5.999E-03	.1739	3.826E-03
MODEL HAS LEFT CENTERLINE								
3252(350)	31.02	4.540E-03	.1310	6.138E-03	.1779	5.890E-03	.1707	3.754E-03
3500(350)	31.01	4.538E-03	.1330	6.135E-03	.1778	5.888E-03	.1706	3.754E-03
3253(350)	31.10	4.510E-03	.1307	6.031E-03	.1748	5.788E-03	.1677	3.690E-03
3501(350)	31.12	4.508E-03	.1306	6.028E-03	.1747	5.785E-03	.1677	3.689E-03



GP15  
6692  
CWC



GROUP 15  
6692



GROUP 15  
6919

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 9/26/73

NASA-HI STS CH4C

AEDC (AO-IN-C) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO P0(P5IA) 10(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 15 10 UNCLIKER H7 7.97 423.2 1242 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF RMU-INF MU-INF HE/FI HREF S/HREF  
 10(UEG H) (P5IA) (P1/SEC) (SLUGS/ELI) (LBS/ELI) (LBS/ELI) (LBS/ELI) (LBS/ELI)  
 94.2 .044 1.975 3791 3.954E-05 7.588E-08 1.976E 06 3.447E-02 2.897E-02

CAMERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MM/CACAN) TBAR(TO) BETAT(TO)  
 10P(T) 6919  
 SIZE(S) 6692 250 84 .0535 0 0

PIC NO TIME DELTIME M(TU) M(TU)/MREF M(.910) M(.910)/MREF M(.91210) M(.91210)/MREF ST(10)

3 3254(250) .03 MODEL HAS NOT REACHED CENTERLINE  
 1 3502(250) .05 MODEL HAS NOT REACHED CENTERLINE  
 1 3503(250) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 2 3255(250) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 1 3504(250) 2.18 MODEL HAS NOT REACHED CENTERLINE  
 2 3256(250) 2.18 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.40

1	3505(250)	3.25	1.90	9.277E-03	.2596	1.180E-02	.3422	1.142E-02	.3312	1.142E-02	.3312	7.691E-03
2	3257(250)	3.25	1.90	9.277E-03	.2596	1.180E-02	.3422	1.142E-02	.3312	1.142E-02	.3312	7.691E-03
1	3506(250)	4.23	2.98	7.432E-03	.2155	9.433E-03	.2735	7.825E-03	.2647	7.825E-03	.2647	6.147E-03
2	3258(250)	4.23	2.98	7.432E-03	.2155	9.433E-03	.2735	7.825E-03	.2647	7.825E-03	.2647	6.147E-03
1	3507(250)	5.41	4.06	6.370E-03	.1847	8.086E-03	.2345	7.825E-03	.2269	7.825E-03	.2269	5.270E-03
2	3259(250)	5.41	4.06	6.370E-03	.1847	8.086E-03	.2345	7.825E-03	.2269	7.825E-03	.2269	5.270E-03
1	3508(250)	6.48	5.13	5.663E-03	.1642	7.189E-03	.2045	6.956E-03	.2017	6.956E-03	.2017	4.685E-03
2	3260(250)	6.48	5.13	5.663E-03	.1642	7.189E-03	.2045	6.956E-03	.2017	6.956E-03	.2017	4.685E-03
1	3509(250)	6.51	5.16	5.650E-03	.1639	7.171E-03	.2080	6.939E-03	.2013	6.939E-03	.2013	4.675E-03
2	3261(250)	6.56	5.21	5.649E-03	.1641	7.171E-03	.2080	6.939E-03	.2013	6.939E-03	.2013	4.675E-03
1	3510(250)	7.28	6.23	5.139E-03	.1490	6.523E-03	.1892	6.312E-03	.1631	6.312E-03	.1631	4.252E-03
2	3262(250)	7.28	6.23	5.139E-03	.1490	6.523E-03	.1892	6.312E-03	.1631	6.312E-03	.1631	4.252E-03
1	3511(250)	8.66	7.31	4.746E-03	.1376	6.024E-03	.1749	5.839E-03	.1693	5.839E-03	.1693	3.930E-03
2	3263(250)	8.66	7.31	4.746E-03	.1376	6.024E-03	.1749	5.839E-03	.1693	5.839E-03	.1693	3.930E-03
1	3512(250)	9.74	8.39	4.431E-03	.1284	5.624E-03	.1630	5.442E-03	.1577	5.442E-03	.1577	3.662E-03
2	3264(250)	9.74	8.39	4.431E-03	.1284	5.624E-03	.1630	5.442E-03	.1577	5.442E-03	.1577	3.662E-03
1	3513(250)	10.51	9.46	4.171E-03	.1209	5.295E-03	.1535	5.123E-03	.1485	5.123E-03	.1485	3.448E-03
2	3265(250)	10.51	9.46	4.171E-03	.1209	5.295E-03	.1535	5.123E-03	.1485	5.123E-03	.1485	3.448E-03
1	3514(250)	11.29	10.54	3.952E-03	.1146	5.017E-03	.1454	4.855E-03	.1407	4.855E-03	.1407	3.267E-03
2	3266(250)	11.29	10.54	3.952E-03	.1146	5.017E-03	.1454	4.855E-03	.1407	4.855E-03	.1407	3.267E-03
1	3515(250)	11.51	10.56	3.748E-03	.1144	5.011E-03	.1452	4.849E-03	.1405	4.849E-03	.1405	3.263E-03
2	3267(250)	11.56	11.62	3.746E-03	.1191	4.779E-03	.1385	4.624E-03	.1340	4.624E-03	.1340	3.111E-03

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5/26/73

NASA-HI SIS UNAC

AEDC (HQU, TAC) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO POI (PSIA) TO (DEG H) ALPHA-MODEL ALPHA-SEC (UM ALPHA-PREREND MOLL-MODEL YAM  
 15 10 UNCLITEM H7 7.97 423.8 1252 29.99 .01 -30.00 180.00 .00

1-INF P-1NF U-1NF V-1NF MU-1NF MU-1NF ME/FI HREF S1REF  
 (DEG H) (PSIA) (EL/SEC) (SLUGS/EL) (LR=SL/EL) (FI-1) (ME .0175FI) (ME .0175FI)  
 94.3 .044 1.978 3792 3.959E-05 7.590E-02 1.578E 06 3.450E-02 2.895E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (HQUACAN) TBAR (TO) BETA (TO)  
 10P (1) 6919  
 SIDE (S) 6692 250 84 .0535 2.221E-01 2.3984E-01

PIC NO	TIME DELT (SEC)	H (10)	H (10)/HREF	H (910)	H (910)/HREF	H (91210)	H (91210)/HREF	ST (TO)
1	3514(250) 12.59	11.64	1.761E-03	1.090	4.714E-03	4.619E-03	.1339	3.108E-03
2	3267(250) 14.64	12.69	3.602E-03	1.044	4.572E-03	4.524E-03	.1325	2.977E-03
3	3515(250) 14.07	12.72	3.598E-03	1.043	4.567E-03	4.520E-03	.1281	2.973E-03
4	3518(250) 13.14	13.79	3.455E-03	1.001	4.380E-03	4.244E-03	.1230	2.855E-03
5	3264(250) 12.14	13.79	3.455E-03	1.001	4.380E-03	4.244E-03	.1230	2.855E-03
6	3264(250) 12.22	14.87	3.320E-03	.9964	4.224E-03	4.087E-03	.1184	2.749E-03
7	3517(250) 12.24	14.89	3.320E-03	.9963	4.220E-03	4.084E-03	.1183	2.747E-03
8	3270(250) 17.29	15.95	3.214E-03	.9931	4.079E-03	3.947E-03	.1144	2.655E-03
9	3518(250) 17.32	15.97	3.211E-03	.9930	4.076E-03	3.944E-03	.1143	2.652E-03
10	3271(250) 18.37	17.02	3.110E-03	.9901	3.948E-03	3.820E-03	.1107	2.569E-03
11	3519(250) 18.40	17.05	3.105E-03	.9900	3.945E-03	3.817E-03	.1106	2.567E-03
12	3520(250) 19.47	18.12	3.014E-03	.9873	3.826E-03	3.702E-03	.1073	2.489E-03
13	3272(250) 19.47	18.12	3.014E-03	.9873	3.826E-03	3.702E-03	.1073	2.489E-03
14	3273(250) 20.25	19.20	2.928E-03	.9858	3.717E-03	3.597E-03	.1042	2.419E-03
15	3521(250) 20.57	19.22	2.928E-03	.9858	3.715E-03	3.595E-03	.1041	2.417E-03
16	3274(250) 21.62	20.28	2.850E-03	.9826	3.617E-03	3.500E-03	.1014	2.354E-03
17	3522(250) 21.65	20.30	2.848E-03	.9825	3.615E-03	3.498E-03	.1013	2.352E-03
18	3275(250) 22.70	21.35	2.777E-03	.9804	3.525E-03	3.411E-03	.0988	2.293E-03
19	3523(250) 22.73	21.38	2.775E-03	.9804	3.523E-03	3.409E-03	.0987	2.292E-03
20	3524(250) 23.60	22.45	2.706E-03	.9785	3.437E-03	3.326E-03	.0964	2.237E-03
21	3276(250) 23.60	22.45	2.706E-03	.9785	3.437E-03	3.326E-03	.0964	2.237E-03
22	3277(250) 24.68	23.53	2.655E-03	.9766	3.358E-03	3.259E-03	.0941	2.184E-03
23	3525(250) 24.70	23.55	2.644E-03	.9766	3.356E-03	3.247E-03	.0941	2.183E-03
24	3278(250) 25.75	24.61	2.587E-03	.9749	3.284E-03	3.177E-03	.0920	2.135E-03
25	3526(250) 25.78	24.63	2.585E-03	.9749	3.282E-03	3.176E-03	.0920	2.134E-03

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 9/26/73

NASA-HI STS CH4C AEDC(HU-INC.) ANNOLU AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL R  
 VA352

GROUP CONFIG MODEL MACH NO P0(PSIA) T0(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND HOLL-MODEL YAW  
 15 10 UNREITER H7 7.97 420.4 1252 29.99 .01 -30.00 180.00 .00

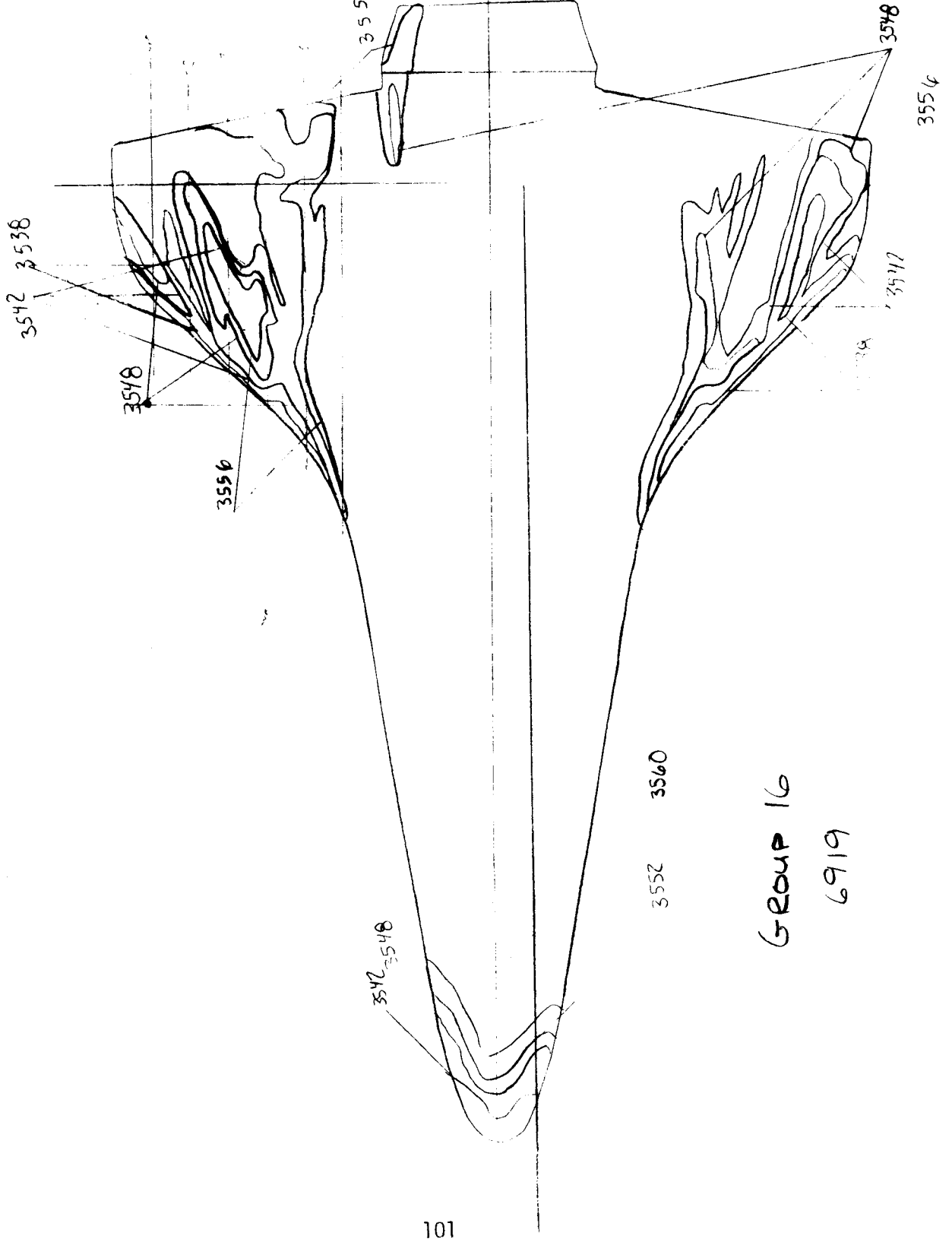
1-INF P-INF U-INF V-INF MU-INF MU-INF HE/FI HREF SIMEF  
 (UEG H) (PSIA) (P/SEC) (SLUGS/FI3) (LBS-SEC/FI2) (FI-1) (HE-0175FI) (HE-0175FI)  
 94.3 .045 1.981 3792 3.964E-05 7.591E-08 1.980E 06 3.453E-02 2.893E-02

CAMERA HOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (HPOXCAR) TBAK(TU) BETA(TU)  
 10K(T) 0.19  
 51K(S) 0.92 250 84 .0535 2.221E-01 2.3984E-01

PIC NO	TIME	DELTIME	H(TU)	H(TU)/HREF	H(.910)	M(.910)/HREF	M(.912TU)	M(.912TU)/HREF	SI(TU)
3271(250)	27.03	25.68	2.532E-03	.0733	3.214E-03	.0931	3.110E-03	.0901	2.090E-03
3271(250)	27.06	25.71	2.531E-03	.0733	3.212E-03	.0930	3.109E-03	.0900	2.089E-03
3280(250)	28.11	26.76	2.461E-03	.0718	3.149E-03	.0912	3.047E-03	.0882	2.047E-03
3281(250)	28.13	26.76	2.479E-03	.0718	3.147E-03	.0912	3.045E-03	.0882	2.045E-03
3281(250)	29.21	27.86	2.431E-03	.0704	3.086E-03	.0894	2.986E-03	.0865	2.007E-03
3281(250)	29.23	27.88	2.430E-03	.0704	3.084E-03	.0893	2.985E-03	.0864	2.006E-03
3282(250)	30.28	28.94	2.305E-03	.0691	3.028E-03	.0877	2.930E-03	.0849	1.989E-03
3530(250)	30.21	28.96	2.364E-03	.0691	3.027E-03	.0877	2.929E-03	.0848	1.969E-03
MODEL HAS LEFT CENTERLINE									
3281(250)	31.16	30.01	2.442E-03	.0678	2.973E-03	.0861	2.877E-03	.0833	1.931E-03
3531(250)	31.39	30.04	2.441E-03	.0678	2.972E-03	.0861	2.876E-03	.0833	1.932E-03

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Group 16  
6919  
W.C.



Group 16  
6919

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 \* UNCLASSIFIED \*  
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9/26/73

NASA-MI STS 044C

AEDC(AROT, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSTA) TO(UG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND MOLL-MODEL YAW

16 4 UNCLITER H1 7.97 424.4 1258 24.99 .01 -30.00 180.00 .00

1-INF P-INF U-INF V-INF MU-INF MU-INF RE/PT HREF SIREF  
 (UG H) (PSTA) (PSTA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LBS/SEC/FT<sup>2</sup>) (EI-D) (H= .0175F) (H= .0175F)

94.7 .045 1.951 3800 3.947E-05 7.623E-08 1.968E 06 3.455E-02 2.901E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCK) TBAR(TO) BETA(TO)

10P(T) 6219 79 .0550 0 0

Slit(S) 6692 350 79 .0550 0 0

PIC NO TIME DELTIME H(TO) H(TO)/HREF H(.910) M(.910)/HREF H(.91210) M(.91210)/HREF ST(10)

1 3532(350) .95 1.709E-02 .5176 2.380E-02 .6443 2.280E-02 .6612 1.470E-02

2 3284(350) 1.93 1.710E-02 .5143 2.364E-02 .6439 2.271E-02 .6569 1.461E-02

3 3285(350) 1.10 1.530E-02 .4138 1.902E-02 .5502 1.582E-02 .5285 1.175E-02

4 3536(350) 4.26 3.01 1.924E-02 .4120 1.894E-02 .5479 1.819E-02 .5262 1.170E-02

5 3289(350) 5.41 4.04 1.426E-02 .3546 1.630E-02 .4716 1.506E-02 .4530 1.007E-02

6 3537(350) 5.43 4.04 1.422E-02 .3535 1.625E-02 .4701 1.501E-02 .4516 1.004E-02

7 3290(350) 6.48 5.13 1.070E-02 .3153 1.450E-02 .4192 1.392E-02 .4027 8.954E-03

8 3538(350) 6.51 5.16 1.067E-02 .3145 1.446E-02 .4182 1.389E-02 .4017 8.932E-03

9 3539(350) 7.58 6.23 9.891E-03 .2860 1.315E-02 .3804 1.263E-02 .3654 8.123E-03

10 3291(350) 7.58 6.23 9.891E-03 .2860 1.315E-02 .3804 1.263E-02 .3654 8.123E-03

11 3540(350) 8.66 7.31 9.134E-03 .2641 1.215E-02 .3513 1.167E-02 .3374 7.501E-03

12 3292(350) 8.66 7.31 9.134E-03 .2641 1.215E-02 .3513 1.167E-02 .3374 7.501E-03

13 3293(350) 9.74 8.39 8.526E-03 .2606 1.134E-02 .3279 1.084E-02 .3150 7.003E-03

14 3541(350) 9.76 8.41 8.515E-03 .2463 1.132E-02 .3275 1.084E-02 .3145 6.993E-03

15 3294(350) 10.81 9.46 8.024E-03 .2322 1.068E-02 .3088 1.025E-02 .2966 6.595E-03

16 3542(350) 10.84 9.49 8.018E-03 .2319 1.066E-02 .3084 1.024E-02 .2962 6.588E-03

17 3295(350) 11.89 10.54 7.607E-03 .2199 1.012E-02 .2925 9.717E-03 .2809 6.245E-03

18 3543(350) 11.91 10.56 7.598E-03 .2197 1.010E-02 .2921 9.705E-03 .2806 6.237E-03

19 3296(350) 12.96 11.62 7.446E-03 .2095 9.636E-03 .2786 9.250E-03 .2676 5.948E-03

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9/26/73

WASA-HI STS 0M4C

VA352

AEDC (ARL, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO POI (PSIA) TO (DEG F) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 16 4 CHELITEM H1 7.97 425.2 1258 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF W-INF MU-INF ME/FI MREF SINEF  
 (DEG F) (PSIA) (PSIA) (PSIA) (SLUGS/FI3) (LBS/SEC/FI3) (FI-L) (M=.0175FI) (M=.0175FI)  
 94.7 .045 1.985 3800 3.954E-05 7.624E-04 1.971E 06 3.459E-02 2.898E-02

CAMERA MULL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODAK) TBAR (TO) BEFA (TO)  
 TOP (T) 6919  
 SURF (S) 6692 350 79 .0550 3.572E-01 4.4904E-01

PIC NO	TIME	UCLTIME	H (10)	H (10)/HREF	H (.910)	ML (.910)/HREF	HL (.91210)	HL (.91210)/HREF	ST (10)
1 3544 (350)	12.99	11.64	7.239E-03	.2093	9.626E-03	.2783	9.246E-03	.2674	5.943E-03
5 3277 (350)	14.07	12.72	6.925E-03	.2002	9.209E-03	.2662	8.846E-03	.2557	5.684E-03
1 3545 (350)	14.09	12.74	6.419E-03	.2000	9.200E-03	.2660	8.637E-03	.2555	5.679E-03
5 3298 (350)	12.14	13.79	6.820E-03	.1922	8.443E-03	.2554	8.444E-03	.2455	5.457E-03
1 3546 (350)	13.17	13.82	6.044E-03	.1921	8.835E-03	.2554	8.446E-03	.2453	5.452E-03
5 3299 (350)	10.42	14.87	6.405E-03	.1852	8.517E-03	.2462	8.101E-03	.2305	5.256E-03
1 3547 (350)	10.44	14.84	6.399E-03	.1850	8.510E-03	.2460	8.174E-03	.2303	5.253E-03
5 3300 (350)	17.29	15.95	6.185E-03	.1798	8.224E-03	.2376	7.900E-03	.2284	5.017E-03
1 3548 (350)	17.32	15.97	6.180E-03	.1787	8.218E-03	.2376	7.893E-03	.2282	5.012E-03
5 3301 (350)	14.47	17.02	5.948E-03	.1731	7.940E-03	.2301	7.646E-03	.2210	4.913E-03
1 3549 (350)	14.40	17.05	5.942E-03	.1729	7.944E-03	.2299	7.640E-03	.2208	4.908E-03
5 3302 (350)	19.45	18.10	5.805E-03	.1678	7.720E-03	.2231	7.415E-03	.2143	4.763E-03
1 3550 (350)	19.47	18.12	5.801E-03	.1677	7.714E-03	.2230	7.410E-03	.2142	4.759E-03
5 3303 (350)	20.25	19.20	5.636E-03	.1629	7.495E-03	.2166	7.199E-03	.2081	4.623E-03
1 3551 (350)	20.27	19.22	5.633E-03	.1628	7.490E-03	.2165	7.195E-03	.2079	4.620E-03
5 3304 (350)	21.42	20.28	5.445E-03	.1585	7.294E-03	.2108	7.006E-03	.2024	4.457E-03
1 3552 (350)	21.45	20.30	5.441E-03	.1584	7.289E-03	.2106	7.001E-03	.2023	4.454E-03
5 3305 (350)	22.00	21.35	5.345E-03	.1545	7.107E-03	.2054	6.827E-03	.1973	4.383E-03
1 3553 (350)	22.73	21.38	5.342E-03	.1544	7.103E-03	.2053	6.823E-03	.1972	4.381E-03
5 3554 (350)	23.80	22.45	5.212E-03	.1506	6.931E-03	.2002	6.657E-03	.1923	4.273E-03
1 3555 (350)	23.80	22.45	5.212E-03	.1506	6.931E-03	.2002	6.657E-03	.1923	4.273E-03
5 3307 (350)	24.28	23.53	5.091E-03	.1471	6.770E-03	.1956	6.504E-03	.1879	4.175E-03
1 3556 (350)	24.30	23.55	5.089E-03	.1470	6.767E-03	.1955	6.500E-03	.1878	4.172E-03
5 3308 (350)	25.35	24.61	4.979E-03	.1438	6.621E-03	.1913	6.356E-03	.1837	4.081E-03
1 3556 (350)	25.38	24.63	4.976E-03	.1438	6.617E-03	.1912	6.356E-03	.1836	4.079E-03

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9/26/73

NASA-HI STS OH4C

AEDCTAWO, INC.) ARNOLD AFS, TENNESSEE

VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSTAL) IU(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW

16 4 UNREITER H1 7.97 425.8 1298 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-IMP ME/FI MREF SIMEF

94.7 0.045 1.987 3800 3.960E-05 7.625E-02 1.974E 06 3.461E-02 2.896E-02

IDEF NO (PSTAL) (K1/2K1) (SLUGS/FT3) (LBS/SEC/FT2) (FT/L) (RE .0175FT)

94.7 0.045 1.987 3800 3.960E-05 7.625E-02 1.974E 06 3.461E-02 2.896E-02

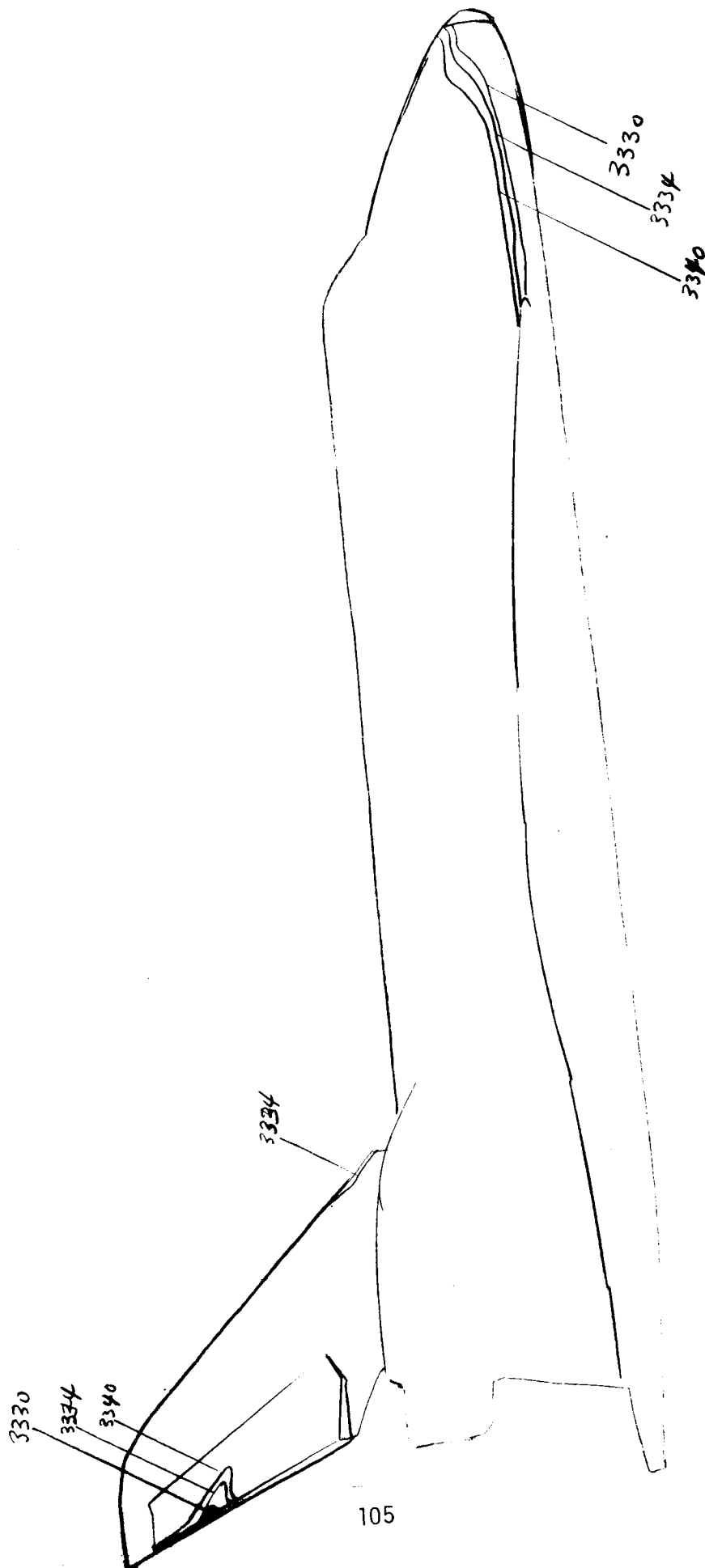
CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHQACAK) TBAK(TO) HETAITO)

10P(1) 0519 350 79 .0550 3.572E-01 4.4904E-01

STUE(1) 0592 350 79 .0550 3.572E-01 4.4904E-01

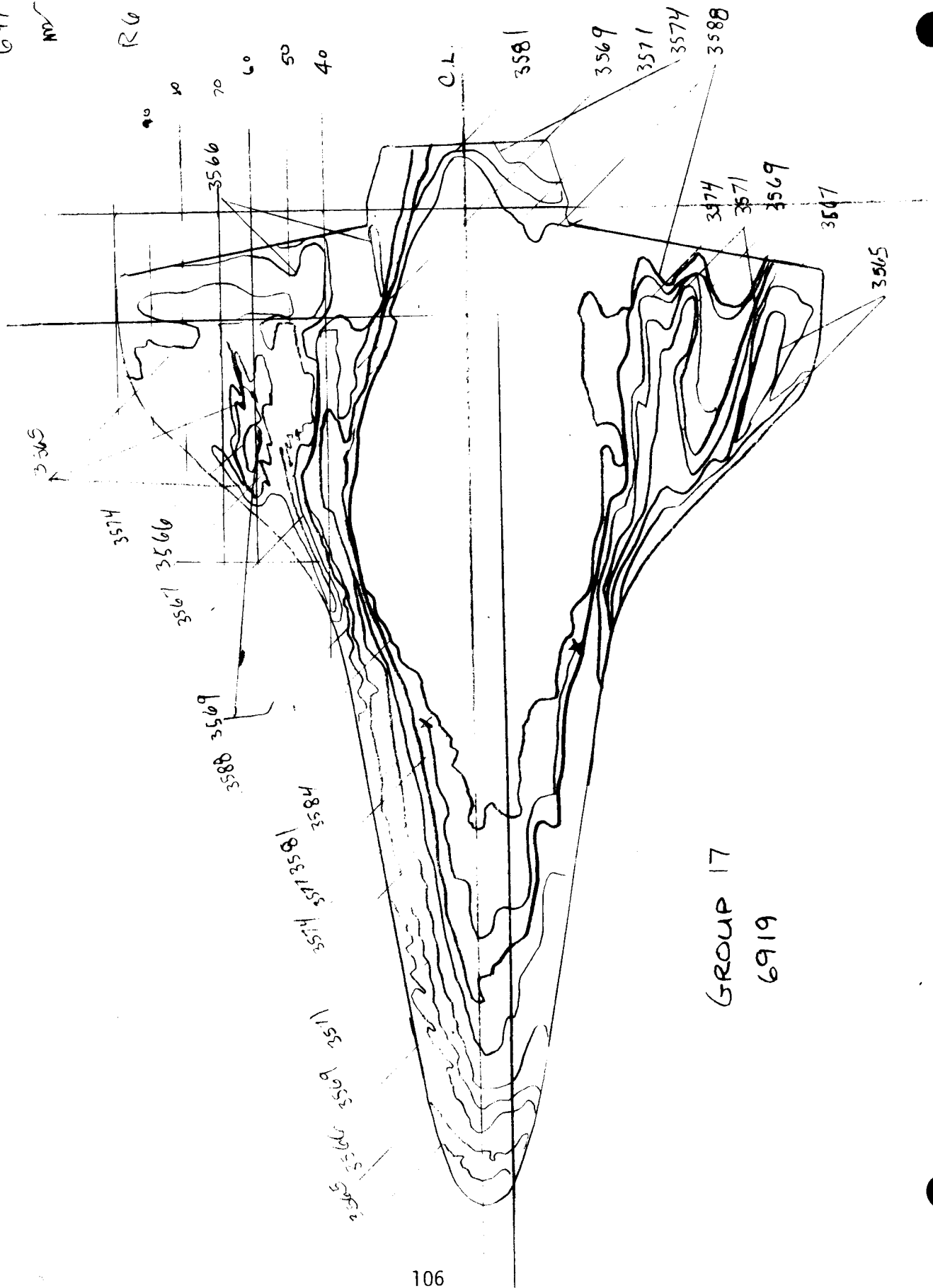
PIC NO	TIME DELTIME	M(IU)	M(IU)/MREF	M(.910)	M(.910)/MREF	M(.91210)	M(.91210)/MREF	ST(10)
3309(350)	27.03 25.68	4.873E-03	1.408	6.481E-03	1.872	6.225E-03	1.798	3.995E-03
3357(350)	27.06 25.71	4.871E-03	1.407	6.477E-03	1.871	6.222E-03	1.798	3.993E-03
3310(350)	26.13 26.78	4.772E-03	1.379	6.348E-03	1.834	6.095E-03	1.761	3.913E-03
3358(350)	26.16 26.81	4.770E-03	1.378	6.343E-03	1.833	6.093E-03	1.760	3.910E-03
3311(350)	25.21 27.86	4.679E-03	1.352	6.222E-03	1.798	5.976E-03	1.727	3.837E-03
3359(350)	25.23 27.88	4.677E-03	1.351	6.219E-03	1.797	5.974E-03	1.726	3.835E-03
3312(350)	30.28 26.94	4.591E-03	1.326	6.105E-03	1.764	5.864E-03	1.694	3.763E-03
3360(350)	30.31 26.96	4.589E-03	1.326	6.103E-03	1.763	5.862E-03	1.693	3.761E-03
3301(350)	31.04 31.04	4.506E-03	1.302	5.992E-03	1.731	5.756E-03	1.663	3.692E-03
3313(350)	31.09 31.09	4.506E-03	1.302	5.992E-03	1.731	5.756E-03	1.663	3.692E-03

GP 17  
6692  
CWE



Group 17  
6692

Group 17  
6919  
ms



GROUP 17  
6919

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5/20/73

NASA-MI STS 0M4C  
 VAJ52  
 AEDC (ARO) INC. ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO. P0(P51A) T0(UG M) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND MOLL-MODEL YAW  
 17 9 UNREITEM #6 7.97 422.4 1292 29.98 .02 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF MU-INF MU-IMP HE/FT HREF SREF  
 (DEG M) (PSIA) (PI/SEC) (SLUGS/FT3) (LR-SEC/FT2) (EL-1) (H= .0175FT) (H= .0175FT)  
 94.3 .044 1.971 3792 3.946E-05 7.589E-08 1.971E 06 3.444E-02 2.900E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/SEC) THAR(TO) BETA(TO)  
 104(T) 6919  
 516(T) 6692 250 H1 .0535 0 0

PIC NO	TIME DELT	M(10)	M(TU)/HREF	M(.910)	M(.910)/HREF	M(.912)	M(.912)/HREF	ST(10)
3314(250)	.05	MODEL HAS NOT REACHED CENTERLINE	9.490E-03	.2755	1.204E-02	.3495	1.105E-02	.3382
3302(250)	.08	MODEL HAS NOT REACHED CENTERLINE	9.421E-03	.2737	1.196E-02	.3472	1.104E-02	.3360
3315(250)	1.10	MODEL HAS NOT REACHED CENTERLINE	7.575E-03	.2200	9.612E-03	.2791	9.301E-03	.2701
3303(250)	1.13	MODEL HAS NOT REACHED CENTERLINE	7.544E-03	.2190	9.572E-03	.2779	9.262E-03	.2689
3316(250)	2.18	MODEL HAS NOT REACHED CENTERLINE	6.409E-03	.1878	8.209E-03	.2383	7.943E-03	.2306
3304(250)	2.20	MODEL HAS NOT REACHED CENTERLINE	6.409E-03	.1878	8.209E-03	.2383	7.943E-03	.2306
3317(250)	3.25	1.89	5.739E-03	.1670	7.300E-03	.2114	7.094E-03	.2051
3305(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3318(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3306(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3319(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3320(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3308(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3321(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3307(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3322(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3309(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3323(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3311(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3324(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3312(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3325(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3313(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3326(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3314(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3327(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3315(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3328(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3316(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3329(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3317(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3330(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3318(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3331(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3332(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3333(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3334(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3335(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3336(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3337(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3338(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3339(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3340(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3341(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3342(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3343(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3344(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3345(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3346(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3347(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3348(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3349(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3350(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3351(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3352(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3353(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3354(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3355(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3356(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3357(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3358(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3359(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3360(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3361(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3362(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3363(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3364(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3365(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3366(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3367(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3368(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3369(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3370(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3371(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3372(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3373(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3374(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3375(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3376(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3377(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3378(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3379(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3380(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3381(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3382(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3383(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3384(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3385(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3386(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3387(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3388(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3389(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3390(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3391(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3392(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3393(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3394(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3395(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3396(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3397(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3398(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3399(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3400(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3401(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3402(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3403(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3404(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3405(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3406(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3407(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3408(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3409(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3410(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114	7.094E-03	.2045
3411(250)	3.28	1.92	5.739E-03	.1660	7.282E-03	.2114		

9/26/73

WEDC (AHO, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL #

50 INCH FIBRESONIC TUNNEL H

I=INF	P=INF	Q=INF	V=INF	MNO=INF	MU=INF	RE/FI	MREF	SREF
(DEG M)	(PSIA)	(PSIA)	(F/LSEC)	(SLUGS/FI)	(LH=SEC/FI)	(FI=I)		
94.2	.044	1.973	3791	3.950E-05	7.58/E-08	1.974E 06	3.446E-02	2.898E-02

PIC NO	TIME	DELTIME	H(110)	M(110)/HREF	H(-910)	M(-910)/HREF	H(-91210)	M(-91210)/HREF	ST(110)
3327(250)	14.19	12.73	3.658E-03	.1062	4.661E-03	.1347	4.491E-03	.1303	3.031E-03
3375(250)	14.12	12.75	3.654E-03	.1060	4.636E-03	.1346	4.486E-03	.1302	3.027E-03
3376(250)	15.17	13.80	3.612E-03	.1019	4.456E-03	.1252	4.312E-03	.1252	2.910E-03
3576(250)	15.19	13.83	3.569E-03	.1012	4.452E-03	.1292	4.308E-03	.1251	2.908E-03
3329(250)	16.24	14.88	3.364E-03	.0982	4.252E-03	.1246	4.150E-03	.1205	2.802E-03
3577(250)	16.27	14.91	3.360E-03	.0981	4.254E-03	.1244	4.150E-03	.1204	2.799E-03
3330(250)	17.32	15.96	3.267E-03	.0948	4.145E-03	.1203	4.011E-03	.1164	2.706E-03
3578(250)	17.34	15.98	3.264E-03	.0947	4.142E-03	.1202	4.008E-03	.1163	2.704E-03
3331(250)	18.42	17.06	3.159E-03	.0917	4.009E-03	.1163	3.879E-03	.1126	2.617E-03
3579(250)	18.45	17.08	3.157E-03	.0916	4.006E-03	.1162	3.876E-03	.1125	2.615E-03
3332(250)	19.50	18.13	3.064E-03	.0889	3.868E-03	.1128	3.762E-03	.1092	2.538E-03
3580(250)	19.52	18.16	3.062E-03	.0888	3.865E-03	.1127	3.760E-03	.1091	2.535E-03
3333(250)	20.57	19.21	2.971E-03	.0864	3.778E-03	.1096	3.659E-03	.1061	2.465E-03
3581(250)	20.60	19.24	2.975E-03	.0863	3.775E-03	.1095	3.653E-03	.1060	2.463E-03
3334(250)	21.65	20.29	2.874E-03	.0841	3.676E-03	.1067	3.557E-03	.1032	2.399E-03
3582(250)	21.67	20.31	2.872E-03	.0840	3.674E-03	.1066	3.555E-03	.1032	2.398E-03
3335(250)	22.13	21.36	2.823E-03	.0819	3.583E-03	.1039	3.466E-03	.1006	2.337E-03
3583(250)	22.15	21.39	2.822E-03	.0819	3.580E-03	.1039	3.464E-03	.1005	2.336E-03
3336(250)	23.60	22.44	2.755E-03	.0799	3.495E-03	.1014	3.382E-03	.0981	2.280E-03
3584(250)	23.63	22.46	2.753E-03	.0799	3.493E-03	.1013	3.380E-03	.0981	2.279E-03
3337(250)	24.70	23.54	2.669E-03	.0780	3.412E-03	.0990	3.302E-03	.0958	2.227E-03
3585(250)	24.73	23.57	2.668E-03	.0780	3.411E-03	.0989	3.300E-03	.0957	2.225E-03
3338(250)	25.98	24.62	2.630E-03	.0763	3.372E-03	.0968	3.229E-03	.0937	2.177E-03
3586(250)	26.00	24.64	2.629E-03	.0763	3.355E-03	.0968	3.227E-03	.0936	2.176E-03
3339(250)	27.06	25.64	2.574E-03	.0747	3.266E-03	.0948	3.161E-03	.0917	2.131E-03

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 9/26/73

AECU(AHOS) INC., ARNOLD AFS, TENNESSEE  
 WIND KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

NASA-HI STS 0M4C

VA352

GROUP CONFIG MODEL MACH NO MU(PSIA) TO(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND ROLL-MODEL YAW  
 17 9 UNREITEM H6 7.97 423.2 1291 24.98 .02 -30.00 180.00 .00

T-INF P-INF U-INF V-INF W-INF MU-INF ME/PT HREF STREF  
 (UEG H) (PSIA) (PSIA) (FI/SEC) (SLUGS/FI) (LD-SEC/FI) (FI-1) (R= .0175F) (R= .0175F)  
 94.2 .004 1.975 3791 3.954E-05 7.587E-08 1.976E 06 3.447E-02 2.897E-02

CAMERA KOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MM/CAK) TGRN(TO) REI(TO)

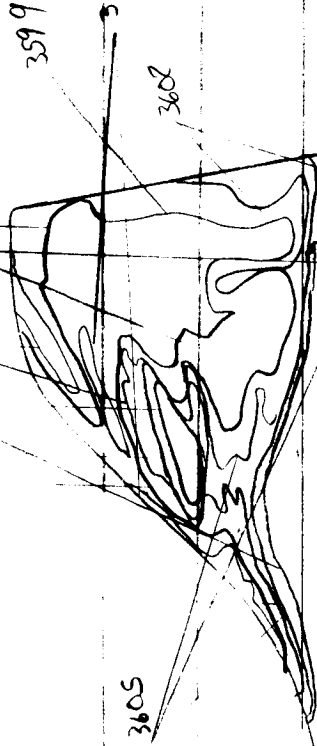
TOP(T) 0219 250 H1 .0535 2.251E-01 2.4390E-01

SIDE(S)

PIC NO	TYPE	DELTIME	H(10)	HL(TO)/HREF	H(.910)	HL(910)/HREF	HL(.91210)	HL(.91210)/HREF	ST(10)
1	3507(250)	27.08	25.72	2.573E-03	.0746	3.265E-03	.0947	3.159E-03	.0916
2	3340(250)	28.13	28.77	2.522E-03	.0732	3.200E-03	.0928	3.097E-03	.0898
3	3588(250)	28.16	28.79	2.521E-03	.0731	3.199E-03	.0928	3.095E-03	.0898
4	3588(250)	28.21	27.85	2.474E-03	.0717	3.130E-03	.0910	3.036E-03	.0881
5	3341(250)	29.23	27.87	2.472E-03	.0717	3.130E-03	.0910	3.035E-03	.0880
MODEL HAS LEFT CENTERLINE									
6	3342(250)	30.51	28.95	2.425E-03	.0703	3.077E-03	.0892	2.976E-03	.0864
7	3590(250)	30.53	28.97	2.424E-03	.0703	3.076E-03	.0892	2.977E-03	.0863

Group 18  
6919

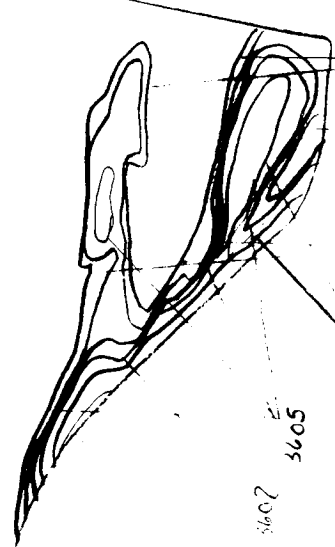
3609  
3618  
3605  
3599  
3612  
3595



3599  
3602  
3605  
3609  
3612  
3618

Group 18  
6919

3599  
3602  
3605  
3612  
3618  
3609  
3612  
3618



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9/26/73

NASA-RI STS 0H4C  
 AECUANO, INC., AMNOLD AFS, TENNESSEE  
 YOUNG MAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO P0(PSIA) T0(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND HOLL-MODEL YAW  
 1H 5 ONEITER H2 1.97 422.8 1290 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF HE/FI HREF SIREF  
 (UEG H) (PSIA) (PI/SEC) (SLUGS/FI3) (LBS/SEC/FI2) (FI-1) (H= .0175FI) (H= .0175FI)  
 94.2 .044 1.973 3790 3.954E-05 7.581E-08 1.970E 06 3.445E-02 2.897E-02

CAMERA HOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MM/ACAK) TBAK(TO) RETA(TO)  
 TOP(T) 6719  
 SLUG(S) 6692 350 78 .0550 0 0

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(TO)
3343(350)	.05	MODEL HAS NOT REACHED CENTERLINE		5302	2.438E-02	.7072	2.341E-02	1.504E-02
3591(350)	.08	MODEL HAS NOT REACHED CENTERLINE		5267	2.422E-02	.7026	2.325E-02	1.494E-02
3592(350)	.13	MODEL HAS NOT REACHED CENTERLINE		4214	1.938E-02	.5621	1.801E-02	1.195E-02
3344(350)	.13	MODEL HAS NOT REACHED CENTERLINE		4197	1.930E-02	.5598	1.853E-02	1.190E-02
3345(350)	.218	MODEL HAS NOT REACHED CENTERLINE		3614	1.662E-02	.4820	1.596E-02	1.025E-02
3346(350)	.250	MODEL HAS NOT REACHED CENTERLINE		3603	1.657E-02	.4805	1.591E-02	1.021E-02
3347(350)	.250	MODEL HAS NOT REACHED CENTERLINE		3213	1.478E-02	.4286	1.419E-02	9.111E-03
3348(350)	.250	MODEL HAS NOT REACHED CENTERLINE		3206	1.474E-02	.4276	1.416E-02	9.089E-03
3349(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2922	1.344E-02	.3897	1.290E-02	8.284E-03
3350(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2916	1.341E-02	.3890	1.288E-02	8.267E-03
3351(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2693	1.239E-02	.3592	1.189E-02	7.635E-03
3352(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2569	1.237E-02	.3546	1.187E-02	7.622E-03
3353(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2515	1.157E-02	.3354	1.111E-02	7.128E-03
3354(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2511	1.155E-02	.3349	1.109E-02	7.117E-03
3355(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2236	1.089E-02	.3153	1.044E-02	6.711E-03
3356(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2234	1.088E-02	.3153	1.044E-02	6.700E-03
3357(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2240	1.031E-02	.2988	.9897E-03	6.349E-03
3358(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2238	1.030E-02	.2985	.9885E-03	6.343E-03
3359(350)	.250	MODEL HAS NOT REACHED CENTERLINE		2134	.9420E-03	.2847	.9420E-03	6.048E-03

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9/26/73

NASA-WI SIS OH4C

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) I(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREPEND HOLL-MODEL YAW  
 18 5 UNREITEM H2 1.97 423.8 1250 29.99 .01 -30.00 180.00 .00

I-INF P-INF Q-INF V-INF MU-INF HMO-INF RE/FI HREF SREF  
 (UEG H) (PSIA) (EL/SEC) (SLUGS/FT3) (LBS/SEC/FT2) (FT/L) (RE .0175EI) (RE .0175EI)

94.2 .004 1.976 3/69 3.964E-05 7.580E-08 1.582E 06 3.450E-02 2.693E-02

CAMERA HOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHOCAR) TBAN(TO) RE(TAU)

10P(T) 0719

SUE(S) 0692

0550 3.016E-01 4.5693E-01

PIC NO	TIME DELTIME	H(TU)	M(TU)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(110)
1 3603(350)	13.64	11.68	7.354E-03	.2132	9.810E-03	.2844	9.418E-03	.2730
2 3506(350)	14.09	12.73	7.044E-03	.2042	9.376E-03	.2723	9.021E-03	.2615
3 3604(350)	14.12	12.75	7.037E-03	.2040	9.367E-03	.2721	9.012E-03	.2612
4 3357(350)	15.17	13.80	6.769E-03	.1980	9.022E-03	.2615	8.682E-03	.2511
5 3605(350)	15.19	13.83	6.758E-03	.1959	9.014E-03	.2612	8.654E-03	.2508
6 3358(350)	16.27	14.91	6.504E-03	.1887	8.683E-03	.2517	8.336E-03	.2416
7 3606(350)	16.29	14.93	6.504E-03	.1885	8.675E-03	.2515	8.329E-03	.2414
8 3359(350)	17.24	15.98	6.266E-03	.1822	8.355E-03	.2430	8.051E-03	.2334
9 3607(350)	17.37	16.01	6.261E-03	.1821	8.379E-03	.2429	8.044E-03	.2332
10 3360(350)	18.92	17.06	6.005E-03	.1764	8.116E-03	.2352	7.772E-03	.2258
11 3608(350)	18.45	17.08	6.000E-03	.1762	8.110E-03	.2351	7.767E-03	.2257
12 3361(350)	19.50	18.13	5.942E-03	.1711	7.872E-03	.2282	7.558E-03	.2191
13 3609(350)	19.52	18.16	5.897E-03	.1709	7.866E-03	.2280	7.552E-03	.2189
14 3362(350)	20.57	19.21	5.734E-03	.1662	7.648E-03	.2217	7.343E-03	.2128
15 3610(350)	20.60	19.24	5.730E-03	.1661	7.643E-03	.2215	7.338E-03	.2127
16 3611(350)	21.67	20.31	5.578E-03	.1616	7.438E-03	.2156	7.141E-03	.2070
17 3363(350)	21.67	20.31	5.578E-03	.1616	7.438E-03	.2156	7.141E-03	.2070
18 3614(350)	22.75	21.39	5.434E-03	.1575	7.248E-03	.2101	6.959E-03	.2017
19 3612(350)	22.78	21.41	5.431E-03	.1574	7.244E-03	.2100	6.955E-03	.2016
20 3365(350)	23.63	22.46	5.302E-03	.1537	7.073E-03	.2050	6.790E-03	.1968
21 3613(350)	23.65	22.49	5.299E-03	.1536	7.069E-03	.2048	6.787E-03	.1967
22 3366(350)	24.50	23.54	5.160E-03	.1501	6.909E-03	.2002	6.633E-03	.1923
23 3614(350)	24.53	23.57	5.177E-03	.1500	6.905E-03	.2001	6.630E-03	.1921
24 3367(350)	25.98	24.62	5.005E-03	.1468	6.756E-03	.1958	6.487E-03	.1880
25 3615(350)	26.00	24.64	5.003E-03	.1467	6.753E-03	.1957	6.483E-03	.1879

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5/26/73

NASA-HI SYS OHAC

AEUC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) IO(UEG H) ALPFA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 1H 5 UNCLITEM M2 7.97 423.9 1290 29.99 .01 -50.00 180.00 .00

I-INF P-INF U-INF V-INF MU-INF MU-INF ME/FI MREF SREF  
 UEG-R (PSIA) (FI/SEC) (SLUGS/FI3) (LB-SEC/FI2) (FI-1) (H=.0175FI) (H=.0175FI)  
 9.1 .084 1.975 3789 3.965E-05 7.580E-08 1.582E 06 3.450E-02 2.893E-02

LAPEHA MULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (H0XCAK) TBAH(TO) BEFA(TO)  
 10P(T) 679  
 SUE(TS) 692 350 78 .0550 3.010E-01 4.5693E-01

PIC NO	TIME DELTIME	H(1U)	H(TU)/HREF	H(-910)	M(-910)/HREF	M(.91210)	M(.91210)/HREF	ST(TO)
336d(350)	27.06	4.958E-03	.1437	6.613E-03	.1916	6.344E-03	.1840	4.069E-03
336b(350)	27.08	4.958E-03	.1436	6.610E-03	.1915	6.346E-03	.1839	4.067E-03
336y(350)	26.16	4.855E-03	.1407	6.476E-03	.1877	6.218E-03	.1802	3.986E-03
3617(350)	26.18	4.853E-03	.1406	6.473E-03	.1876	6.215E-03	.1801	3.984E-03
337u(350)	27.23	4.760E-03	.1379	6.350E-03	.1840	6.096E-03	.1766	3.907E-03
3618(350)	27.26	4.758E-03	.1379	6.347E-03	.1839	6.094E-03	.1766	3.905E-03
3371(350)	30.31	4.671E-03	.1353	6.231E-03	.1805	5.982E-03	.1733	3.834E-03
3619(350)	30.33	4.669E-03	.1353	6.228E-03	.1805	5.979E-03	.1733	3.832E-03
MODEL HAS LEFT CENTERLINE								
3372(350)	31.29	4.587E-03	.1329	6.118E-03	.1773	5.874E-03	.1702	3.764E-03
3620(350)	31.41	4.585E-03	.1328	6.115E-03	.1772	5.871E-03	.1701	3.763E-03



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9/26/73

NASA-HI SIS OHAC  
 VA352  
 AEDC(AHO, INC.) ANNULUS AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG MODEL MACH NO POT(PISA) TO(UEV M) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND ROLL-MODEL YAW  
 14 4 UNRETIEM H1 7.97 423.0 1250 29.99 .01 -30.00 180.00 .00

T-INT P-INT U-INT V-INT MU-INT ME/FI HREF SREF  
 (UEV M) (P2JA) (P2JA) (FI/SEC) (SLUGS/FI2) (FI-1) (M=.0175FI) (M=.0175FI)  
 94.1 .044 1.974 3708 3.958E-05 7.57E-08 1.579E 06 3.446E-02 2.895E-02

CAMERA ROLL NO PAINT TEMP (UEV F) INITIAL TEMP (UEV F) SQUARE ROOT (MMUACXK) TBAH(TU) BETA(TO)  
 TOP(T) 6714  
 SIDE(S) 6092 250 81 .0535 0 0

PIC NO TIME DELTIME H(10) H(TU)/HREF H(-910) H(.910)/HREF H(-91210) H(.91210)/HREF ST(10)

3 3373(250) .03 1.90 9.408E-03 .2793 1.205E-02 .3495 1.105E-02 .3381 7.846E-03  
 1 3621(250) .05 1.90 9.408E-03 .2753 1.205E-02 .3495 1.105E-02 .3381 7.846E-03  
 3 3374(250) 1.10 2.49 7.289E-13 .2200 9.629E-03 .2793 9.629E-03 .2703 6.212E-03  
 1 3622(250) 1.13 3.01 7.553E-03 .2191 9.588E-03 .2782 9.588E-03 .2692 6.245E-03  
 1 3623(250) 2.18 4.06 6.501E-03 .1856 8.253E-03 .2395 8.253E-03 .2317 5.377E-03  
 3 3375(250) 3.43 4.08 6.461E-03 .1880 8.228E-03 .2387 8.228E-03 .2310 5.361E-03  
 1 3624(250) 5.48 5.13 5.779E-03 .1617 7.337E-03 .2128 7.337E-03 .2059 4.778E-03  
 1 3625(250) 6.51 5.16 5.705E-03 .1672 7.319E-03 .2123 7.319E-03 .2054 4.767E-03  
 3 3376(250) 7.56 8.21 5.259E-03 .1524 6.671E-03 .1935 6.671E-03 .1873 4.344E-03  
 1 3626(250) 7.58 8.23 5.244E-03 .1521 6.658E-03 .1931 6.658E-03 .1869 4.336E-03  
 3 3377(250) 8.63 7.24 4.831E-03 .1408 6.159E-03 .1787 6.159E-03 .1729 4.014E-03  
 1 3627(250) 8.66 7.31 4.843E-03 .1405 6.148E-03 .1784 6.148E-03 .1726 4.004E-03  
 3 3378(250) 9.74 8.39 4.522E-03 .1311 5.740E-03 .1665 5.740E-03 .1611 3.737E-03  
 1 3628(250) 9.74 8.39 4.522E-03 .1311 5.740E-03 .1665 5.740E-03 .1611 3.737E-03  
 3 3379(250) 10.81 9.46 4.237E-03 .1245 5.404E-03 .1568 5.404E-03 .1517 3.520E-03  
 1 3631(250) 10.84 9.49 4.231E-03 .1233 5.397E-03 .1566 5.397E-03 .1515 3.515E-03  
 3 3384(250) 11.89 10.54 4.033E-03 .1170 5.121E-03 .1485 5.121E-03 .1437 3.333E-03  
 1 3632(250) 11.91 10.56 4.024E-03 .1169 5.115E-03 .1484 5.115E-03 .1435 3.330E-03  
 3 3385(250) 12.96 11.62 3.842E-03 .1114 4.878E-03 .1415 4.720E-03 .1369 3.175E-03

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5/26/73

NASA-MI STS 044C

AEDC(AMOS INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(UEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREREND HOLL-MODEL YAW  
 19 4 UNCLIFFER M1 7.97 423.0 1250 29.99 .01 -30.00 180.00 .00

T-IMP P-IMP U-IMP V-IMP MU-IMP MU-IMP HREF SREF  
 (UEG R) (PSIA) (F/SEC) (SLUGS/FT3) (LBS/FT2) (F/FT) (RE .0175F) (H = .0175F)

94.1 .044 1.977 3769 3.463E-05 7.577E-06 1.582E 06 3.448E-02 2.893E-02

CAPERA HOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MMUACAN) TBRK(TU) BETA(TU)  
 10P(1) 0519  
 SIDE(5) 0692 250 81 .0535 2.257E-01 2.4476E-01

PIC NO	TIME DELTIME	H(TU)	H(TU)/HREF	H(.910)	M(.910)/HREF	M(.91210)/HREF	ST(TU)
1 3633(250)	12.59	11.64	3.838E-03	4.872E-03	.1413	4.715E-03	.1367 3.171E-03
2 3386(250)	14.04	12.69	3.676E-03	4.666E-03	.1353	4.515E-03	.1309 3.037E-03
3 3634(250)	14.07	12.72	3.672E-03	4.662E-03	.1352	4.511E-03	.1308 3.034E-03
4 3287(250)	12.14	11.79	3.526E-03	4.476E-03	.1298	4.331E-03	.1256 2.913E-03
5 3635(250)	12.17	11.82	3.523E-03	4.472E-03	.1297	4.327E-03	.1255 2.910E-03
6 3388(250)	10.62	14.87	3.346E-03	4.311E-03	.1250	4.171E-03	.1210 2.805E-03
7 3636(250)	16.64	14.84	3.343E-03	4.308E-03	.1249	4.168E-03	.1209 2.803E-03
8 3389(250)	17.69	15.95	3.279E-03	4.163E-03	.1207	4.028E-03	.1168 2.708E-03
9 3637(250)	17.32	15.97	3.277E-03	4.160E-03	.1206	4.025E-03	.1167 2.706E-03
10 3390(250)	16.50	17.05	3.172E-03	4.026E-03	.1167	3.896E-03	.1130 2.620E-03
11 3638(250)	18.42	17.07	3.169E-03	4.023E-03	.1167	3.893E-03	.1129 2.618E-03
12 3391(250)	19.47	18.12	3.076E-03	3.905E-03	.1132	3.778E-03	.1096 2.541E-03
13 3639(250)	19.50	18.15	3.074E-03	3.902E-03	.1131	3.776E-03	.1095 2.538E-03
14 3392(250)	20.55	19.20	2.988E-03	3.794E-03	.1100	3.671E-03	.1064 2.468E-03
15 3640(250)	20.57	19.22	2.987E-03	3.792E-03	.1099	3.669E-03	.1064 2.467E-03
16 3393(250)	21.65	20.30	2.906E-03	3.690E-03	.1070	3.570E-03	.1035 2.399E-03
17 3641(250)	21.67	20.33	2.904E-03	3.688E-03	.1069	3.568E-03	.1034 2.398E-03
18 3394(250)	22.73	21.38	2.832E-03	3.596E-03	.1042	3.479E-03	.1009 2.339E-03
19 3642(250)	22.75	21.40	2.831E-03	3.593E-03	.1042	3.477E-03	.1008 2.337E-03
20 3395(250)	23.80	22.45	2.763E-03	3.508E-03	.1017	3.395E-03	.0984 2.282E-03
21 3643(250)	23.83	22.48	2.762E-03	3.506E-03	.1017	3.393E-03	.0984 2.281E-03
22 3396(250)	24.88	23.53	2.706E-03	3.427E-03	.0994	3.316E-03	.0961 2.229E-03
23 3644(250)	24.90	23.55	2.704E-03	3.425E-03	.0993	3.314E-03	.0961 2.227E-03
24 3397(250)	25.98	24.63	2.638E-03	3.350E-03	.0971	3.241E-03	.0939 2.178E-03
25 3645(250)	25.00	24.66	2.637E-03	3.348E-03	.0970	3.239E-03	.0939 2.177E-03

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9/26/73

NASA-HI STS 0H4C

AEDC (AROT, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL R

VA352

GROUP CONFIG MODEL MACH NO MU(PSTAL) LU(DEG R) ALPHA-MODEL ALPHA-SECUM ALPHA-PREBEND HOLL-MODEL YAM  
 19 4 0REITER R1 7.97 424.0 1290 29.99 .01 -30.00 180.00 .00

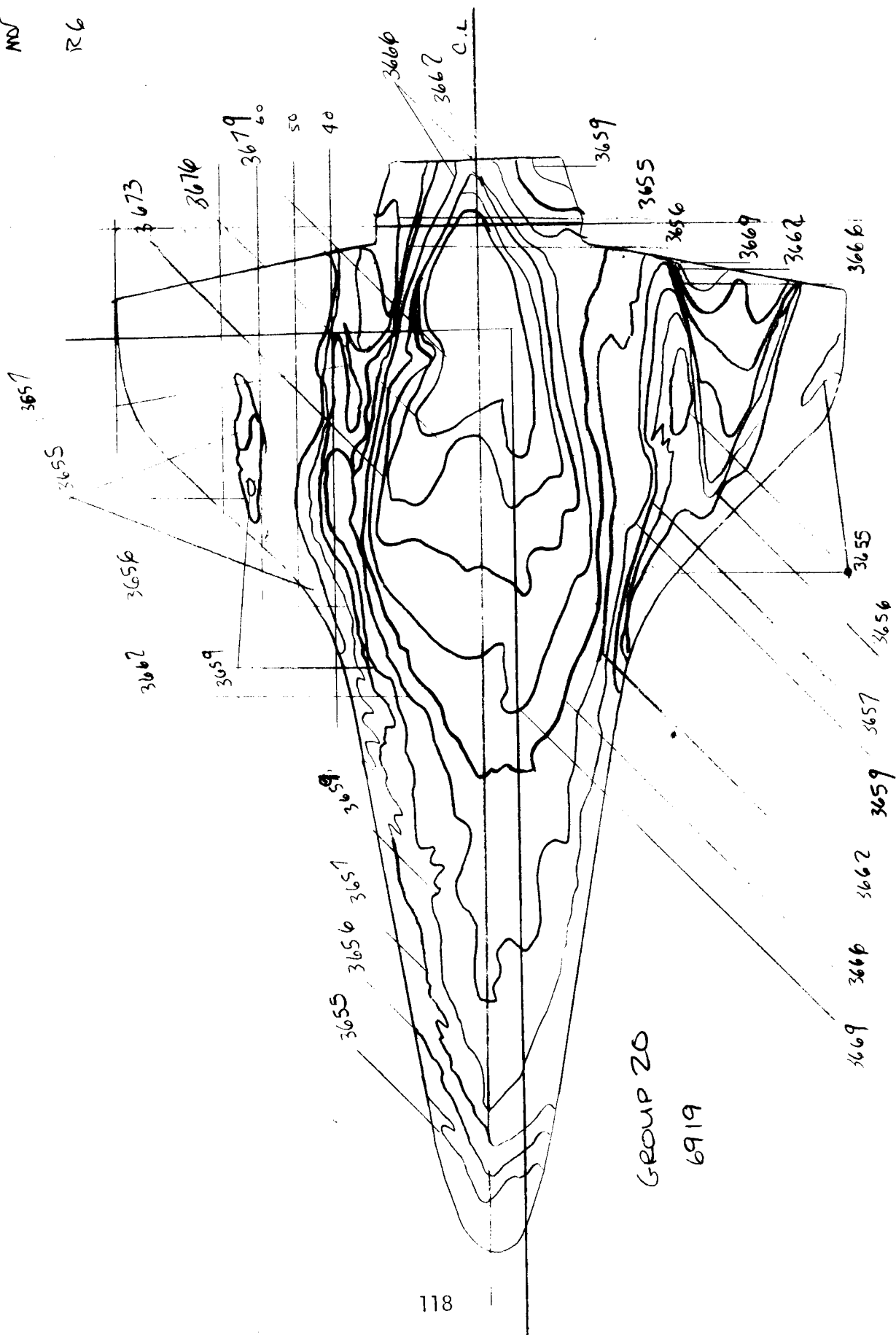
T-INF P-INF U-INF V-INF MU-INF MU-INF HE/FI HREF SREF  
 (DEG R) (PSIA) (PSIA) (PSIA) (SLUGS/FT<sup>3</sup>) (LBS/SEC/FT<sup>2</sup>) (FI-L) (R= .0175FI) (H= .0175ET)  
 90.1 .045 1.979 3709 3.988E-05 7.577E-08 1.988E 06 3.450E-02 2.891E-02

CAMERA HOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MHUACAK) TBAH(TO) RETAT(TO)  
 10P(T) 8719  
 SLOE(S) 0092 250 H1 .0535 2.257E-01 2.4476E-01

PIC NO	TIME DELT/SEC	M(IU)	M(IU)/HREF	M(.910)	M(.910)/HREF	M(.91210)	M(.91210)/HREF	SI(10)
3398(250)	27.06	2.503E-03	.0749	3.279E-03	.0950	3.173E-03	.0920	2.132E-03
3648(250)	27.08	2.501E-03	.0748	3.277E-03	.0950	3.171E-03	.0919	2.131E-03
3399(250)	28.13	2.530E-03	.0733	3.212E-03	.0931	3.108E-03	.0901	2.088E-03
3047(250)	28.81	2.527E-03	.0731	3.211E-03	.0931	3.107E-03	.0900	2.087E-03
3649(250)	27.88	2.400E-03	.0719	3.148E-03	.0912	3.046E-03	.0883	2.046E-03
3400(250)	27.82	2.400E-03	.0719	3.148E-03	.0912	3.046E-03	.0883	2.046E-03
3401(250)	30.31	2.433E-03	.0705	3.089E-03	.0895	2.989E-03	.0866	2.008E-03
3649(250)	30.23	2.432E-03	.0705	3.088E-03	.0895	2.988E-03	.0866	2.007E-03
MODEL HAS LEFT CENTERLINE								
3402(250)	31.01	2.309E-03	.0692	3.033E-03	.0879	2.935E-03	.0850	1.971E-03
3650(250)	31.41	2.308E-03	.0692	3.032E-03	.0879	2.934E-03	.0850	1.970E-03
3403(250)	32.46	2.348E-03	.0680	2.980E-03	.0864	2.884E-03	.0836	1.937E-03
3651(250)	32.49	2.347E-03	.0680	2.979E-03	.0863	2.883E-03	.0835	1.936E-03

Group 20  
6919  
MS

R6



GROUP 20  
6919

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9/26/73

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 YOUNG KAMMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

NASA-MI STS-0H4C

VA352

GROUP CONFIG MODEL MACH NO MU(PSTIA) IQ(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND HOLL-MODEL YAW  
 29 9 UNREITER H6 7.97 425.0 1289 29.99 .01 -30.00 180.00 .00

I-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FI HREF S(REF  
 (UEG H) (PSTIA) (PI/SEC) (LUGS/FEET) (LUGS/FEET) (H= .0175F1) (H= .0175F1)

94.1 .045 1.984 3784 3.979E-05 7.573E-06 1.990E 06 3.454E-02 2.887E-02

CAMERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAK) TBAM(TO) BETA(TO)

104(T) 6919 200 82 .0519 0 0

PIC NO TIME DELTME H(TU) H(TU)/HREF H(.910) H(.910)/HREF H(.912(TU) H(.912(TU)/HREF ST(10)

1 3652(200) .05 MODEL HAS NOT REACHED CENTERLINE .2185 7.545E-03 .1751 7.496E-03 .2170 7.527E-03 .2120 4.994E-03  
 2 3404(200) .05 MODEL HAS NOT REACHED CENTERLINE .2170 7.496E-03 .2170 7.527E-03 .2106 4.961E-03  
 3 3403(200) 1.10 MODEL HAS NOT REACHED CENTERLINE .1744 5.844E-03 .1744 5.844E-03 .1692 3.986E-03  
 4 3653(200) 1.13 MODEL HAS NOT REACHED CENTERLINE .1737 5.819E-03 .1737 5.819E-03 .1685 3.969E-03  
 5 3406(200) 2.18 MODEL HAS NOT REACHED CENTERLINE .1489 4.591E-03 .1489 4.591E-03 .1445 3.405E-03  
 6 3654(200) 2.40 MODEL HAS NOT REACHED CENTERLINE .1445 4.591E-03 .1445 4.591E-03 .1441 3.394E-03  
 7 3411(200) 7.28 9.22 3.411E-03 .0966 4.150E-03 .1205 4.203E-03 .1169 2.753E-03  
 8 3655(200) 7.28 9.22 3.411E-03 .0966 4.150E-03 .1205 4.203E-03 .1169 2.753E-03  
 9 3407(200) 3.45 1.89 6.048E-03 .1751 7.496E-03 .2170 7.527E-03 .2120 4.994E-03  
 10 3656(200) 4.26 2.99 4.808E-03 .1392 5.998E-03 .1737 5.819E-03 .1685 3.969E-03  
 11 3409(200) 5.43 4.07 4.123E-03 .1194 5.144E-03 .1489 4.591E-03 .1445 3.405E-03  
 12 3657(200) 5.46 4.09 4.111E-03 .1190 5.128E-03 .1445 4.591E-03 .1441 3.394E-03  
 13 3410(200) 8.21 5.14 3.667E-03 .1062 4.574E-03 .1322 4.427E-03 .1282 3.022E-03  
 14 3658(200) 8.23 5.17 3.658E-03 .1060 4.563E-03 .1322 4.427E-03 .1282 3.022E-03  
 15 3411(200) 7.28 9.22 3.411E-03 .0966 4.150E-03 .1205 4.203E-03 .1169 2.753E-03  
 16 3659(200) 7.28 9.22 3.411E-03 .0966 4.150E-03 .1205 4.203E-03 .1169 2.753E-03  
 17 3408(200) 8.28 7.32 3.074E-03 .0990 3.834E-03 .1110 3.720E-03 .1077 2.537E-03  
 18 3412(200) 8.28 7.32 3.074E-03 .0990 3.834E-03 .1110 3.720E-03 .1077 2.537E-03  
 19 3413(200) 9.76 8.40 2.870E-03 .0831 3.580E-03 .1037 3.473E-03 .1006 2.370E-03  
 20 3661(200) 9.79 8.42 2.866E-03 .0830 3.575E-03 .1035 3.468E-03 .1004 2.366E-03  
 21 3414(200) 10.54 9.47 2.702E-03 .0742 3.371E-03 .0976 3.270E-03 .0947 2.231E-03  
 22 3662(200) 10.56 9.50 2.698E-03 .0741 3.368E-03 .0975 3.268E-03 .0946 2.228E-03  
 23 3415(200) 11.51 10.55 2.500E-03 .0742 3.194E-03 .0924 3.099E-03 .0897 2.115E-03  
 24 3663(200) 11.54 10.54 2.500E-03 .0741 3.190E-03 .0924 3.095E-03 .0896 2.112E-03  
 25 3664(200) 13.01 11.65 2.306E-03 .0706 3.039E-03 .0880 2.949E-03 .0854 2.012E-03  
 26 3416(200) 13.01 11.65 2.306E-03 .0706 3.039E-03 .0880 2.949E-03 .0854 2.012E-03

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 5/26/73

NASA-HI STS 0H4C

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO P0(PSTA) T0(DEC H) ALPHA-MODEL ALPHA-SECION ALPHA-PREREND MOLL-MODEL YAW  
 20 9 CHEETER #6 7.97 424.8 1289 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF MU-INF MU-INF HREF SINF  
 (DEG H) (PSTA) (PSIA) (FI/SEC) (SLUGS/FI3) (LBS/SEC/FI2) (FI-1) (H# .0175FI) (H# .0175FI)  
 94.1 .045 1.983 3767 3.978E-05 7.572E-08 1.589E 06 3.453E-02 2.888E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAK) TBAR(TU) BEI(A(TU))

IOP(1) 6919  
 SLOC(S) 6692 200 82 .0519 1.579E-01 1.5025E-01

PIC NO	TIME DELTIME	M(TU)	MREF	M(.910)	M(-.910)/HREF	M(.91210)/HREF	ST(TU)
3417(200)	14.69	12.73	.0675	2.908E-03	.0842	2.821E-03	.0817
3665(200)	14.12	12.75	.0674	2.905E-03	.0841	2.819E-03	.0816
3418(200)	15.17	13.80	.0648	2.792E-03	.0809	2.709E-03	.0785
3666(200)	15.19	13.83	.0644	2.790E-03	.0808	2.707E-03	.0784
3667(200)	16.27	14.91	.0624	2.687E-03	.0778	2.607E-03	.0755
3419(200)	16.27	14.91	.0624	2.687E-03	.0778	2.607E-03	.0755
3420(200)	17.24	15.98	.0602	2.595E-03	.0752	2.518E-03	.0729
3668(200)	17.37	16.01	.0602	2.593E-03	.0751	2.516E-03	.0729
3421(200)	18.42	17.06	.0583	2.512E-03	.0728	2.443E-03	.0706
3669(200)	18.55	17.08	.0583	2.510E-03	.0727	2.443E-03	.0705
3422(200)	19.50	18.13	.0566	2.436E-03	.0705	2.364E-03	.0684
3670(200)	19.52	18.16	.0565	2.435E-03	.0705	2.362E-03	.0684
3671(200)	20.50	19.24	.0549	2.366E-03	.0685	2.295E-03	.0665
3423(200)	20.50	19.24	.0549	2.366E-03	.0685	2.295E-03	.0665
3424(200)	21.67	20.31	.0534	2.302E-03	.0667	2.233E-03	.0647
3672(200)	21.70	20.34	.0534	2.301E-03	.0666	2.232E-03	.0646
3425(200)	22.75	21.39	.0521	2.243E-03	.0650	2.176E-03	.0630
3673(200)	22.78	21.41	.0521	2.242E-03	.0649	2.175E-03	.0630
3426(200)	23.83	22.46	.0508	2.189E-03	.0634	2.124E-03	.0615
3674(200)	23.85	22.49	.0508	2.188E-03	.0634	2.123E-03	.0615
3427(200)	24.93	23.57	.0496	2.137E-03	.0619	2.074E-03	.0601
3675(200)	24.95	23.59	.0496	2.136E-03	.0619	2.074E-03	.0600
3428(200)	26.00	24.64	.0485	2.090E-03	.0605	2.028E-03	.0587
3676(200)	26.03	24.67	.0485	2.089E-03	.0605	2.027E-03	.0587
3429(200)	27.08	25.72	.0475	2.046E-03	.0592	1.965E-03	.0575

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5/26/73

NASA-WI SIS UM4C

AECU(AND, INC.) ANNOLU AFS, TENNESSEE  
 YON KAMMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

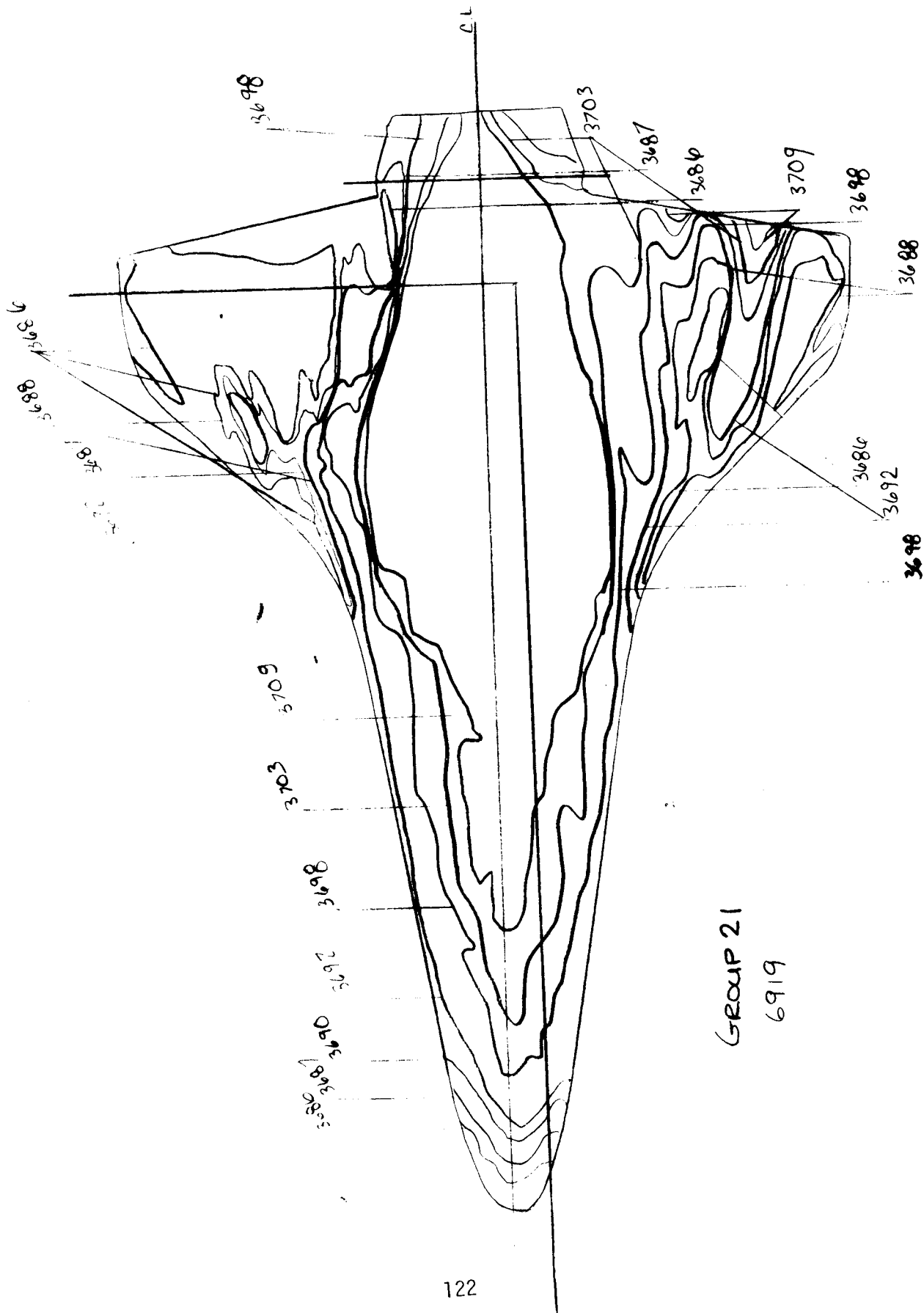
VA352

GROUP CONFIG MODEL MACH NO MU(PSIA) TO(UEG M) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND HOLL-MODEL YAM  
 20 9 UMEITER H6 7.91 424.8 1289 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF W-INF MU-INF RE/FT HREF S/REF  
 (DEG R) (PSIA) (PSIA) (FI/SEC) (SLUGS/FT<sup>3</sup>) (LBS/SEC/FT<sup>2</sup>) (EI-1) (LBS/FT<sup>2</sup>) (LBS/FT<sup>2</sup>)  
 94.1 .045 1.593 3768 3.977E-05 7.573E-08 1.989E 06 3.453E-02 2.888E-02

CAMERA HOLL MU PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAK) TBAK(TU) BETA(TU)  
 TOP(T) 6519  
 SIDE(S) 6692 200 82 .0519 1.579E-01 1.6025E-01

PIC NO	TIME DELTIME	M(TU)	M(TU)/HREF	M(-YU)	M(-910)/HREF	M(-912(U)	H(-912(TU)/HREF	ST(TU)
1 3677(200)	27.11	25.74	1.039E-03	.0475	2.045E-03	.0592	1.984E-03	.0575
5 3430(200)	26.18	26.79	1.037E-03	.0466	2.004E-03	.0581	1.945E-03	.0563
1 3478(200)	26.18	26.82	1.036E-03	.0465	2.003E-03	.0581	1.944E-03	.0563
5 3431(200)	25.26	27.94	1.515E-03	.0456	1.964E-03	.0569	1.908E-03	.0552
1 3679(200)	25.28	27.92	1.514E-03	.0456	1.963E-03	.0569	1.905E-03	.0552
MODEL HAS LEFT CENTERLINE								
5 3432(200)	30.33	28.97	1.545E-03	.0447	1.927E-03	.0558	1.870E-03	.0542
1 3680(200)	30.26	29.03	1.544E-03	.0447	1.927E-03	.0558	1.869E-03	.0541
5 3433(200)	31.41	30.05	1.517E-03	.0439	1.893E-03	.0548	1.836E-03	.0532
1 3681(200)	31.44	30.07	1.517E-03	.0439	1.892E-03	.0548	1.836E-03	.0532



GROUP 21  
6919

**5126173**

AEUC (AHO, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL #

GROUP	CONFIG	MODEL	MACTH NU	PO(PSIA)	TU(DEG H)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	KOLL-MODEL	YAM
21	5	URETILK 42	7.97	423.3	1288	29.98	.02	-30.00	180.00	.00

T-INF	P-INF	Q-INF	V-INF	WQO-INF	MU-INF	RE/FI	MREF	SREF
WQEG.HI	(P\$TAT)	(P\$JAT)	(V/SEC)	(SLUGS/FI 3)	(LBS-SEC/FI 2)	(FI-1)	(RE = .0175FI)	(RE = .0175FI)

HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE HOOT (RHUACAK)	TBAH(TO)	BETA(TO)
APRERA					

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523</
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PIC NO. \_\_\_\_\_ LINE DÉCLINÉ \_\_\_\_\_ H(10) \_\_\_\_\_ H(T0)/HREF H(.910) \_\_\_\_\_ H(.91210)/HREF ST(10) \_\_\_\_\_

3682 (250)	0.65	MODEL HAS NOT REACHED CENTERLINE
3439 (250)	0.65	MODEL HAS NOT REACHED CENTERLINE
3435 (250)	1.10	MODEL HAS NOT REACHED CENTERLINE
3683 (250)	1.13	MODEL HAS NOT REACHED CENTERLINE
3436 (250)	2.18	MODEL HAS NOT REACHED CENTERLINE
3684 (250)	2.60	MODEL HAS NOT REACHED CENTERLINE

INJECT TIME =	2.43	2.44	2.45	2.46	2.47	2.48	2.49	2.50	2.51	2.52	2.53	2.54	2.55	2.56	2.57	2.58	2.59	2.60	2.61	2.62	2.63	2.64	2.65	2.66	2.67	2.68	2.69	2.70	2.71	2.72	2.73	2.74	2.75	2.76	2.77	2.78	2.79	2.80	2.81	2.82	2.83	2.84	2.85	2.86	2.87	2.88	2.89	2.90	2.91	2.92	2.93	2.94	2.95	2.96	2.97	2.98	2.99	3.00	3.01	3.02	3.03	3.04	3.05	3.06	3.07	3.08	3.09	3.10	3.11	3.12	3.13	3.14	3.15	3.16	3.17	3.18	3.19	3.20	3.21	3.22	3.23	3.24	3.25	3.26	3.27	3.28	3.29	3.30	3.31	3.32	3.33	3.34	3.35	3.36	3.37	3.38	3.39	3.40	3.41	3.42	3.43	3.44	3.45	3.46	3.47	3.48	3.49	3.50	3.51	3.52	3.53	3.54	3.55	3.56	3.57	3.58	3.59	3.60	3.61	3.62	3.63	3.64	3.65	3.66	3.67	3.68	3.69	3.70	3.71	3.72	3.73	3.74	3.75	3.76	3.77	3.78	3.79	3.80	3.81	3.82	3.83	3.84	3.85	3.86	3.87	3.88	3.89	3.90	3.91	3.92	3.93	3.94	3.95	3.96	3.97	3.98	3.99	4.00	4.01	4.02	4.03	4.04	4.05	4.06	4.07	4.08	4.09	4.10	4.11	4.12	4.13	4.14	4.15	4.16	4.17	4.18	4.19	4.20	4.21	4.22	4.23	4.24	4.25	4.26	4.27	4.28	4.29	4.30	4.31	4.32	4.33	4.34	4.35	4.36	4.37	4.38	4.39	4.40	4.41	4.42	4.43	4.44	4.45	4.46	4.47	4.48	4.49	4.50	4.51	4.52	4.53	4.54	4.55	4.56	4.57	4.58	4.59	4.60	4.61	4.62	4.63	4.64	4.65	4.66	4.67	4.68	4.69	4.70	4.71	4.72	4.73	4.74	4.75	4.76	4.77	4.78	4.79	4.80	4.81	4.82	4.83	4.84	4.85	4.86	4.87	4.88	4.89	4.90	4.91	4.92	4.93	4.94	4.95	4.96	4.97	4.98	4.99	5.00	5.01	5.02	5.03	5.04	5.05	5.06	5.07	5.08	5.09	5.10	5.11	5.12	5.13	5.14	5.15	5.16	5.17	5.18	5.19	5.20	5.21	5.22	5.23	5.24	5.25	5.26	5.27	5.28	5.29	5.30	5.31	5.32	5.33	5.34	5.35	5.36	5.37	5.38	5.39	5.40	5.41	5.42	5.43	5.44	5.45	5.46	5.47	5.48	5.49	5.50	5.51	5.52	5.53	5.54	5.55	5.56	5.57	5.58	5.59	5.60	5.61	5.62	5.63	5.64	5.65	5.66	5.67	5.68	5.69	5.70	5.71	5.72	5.73	5.74	5.75	5.76	5.77	5.78	5.79	5.80	5.81	5.82	5.83	5.84	5.85	5.86	5.87	5.88	5.89	5.90	5.91	5.92	5.93	5.94	5.95	5.96	5.97	5.98	5.99	6.00	6.01	6.02	6.03	6.04	6.05	6.06	6.07	6.08	6.09	6.10	6.11	6.12	6.13	6.14	6.15	6.16	6.17	6.18	6.19	6.20	6.21	6.22	6.23	6.24	6.25	6.26	6.27	6.28	6.29	6.30	6.31	6.32	6.33	6.34	6.35	6.36	6.37	6.38	6.39	6.40	6.41	6.42	6.43	6.44	6.45	6.46	6.47	6.48	6.49	6.
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NASA-HI STS 0H4C

AEDC (ARMO, INC.) ANNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP	CONFIG	MODEL	MACH NO	PO (PSIA)	TO (DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
21	5	GREITER H2	1.97	423.8	1288	29.98	.02	-50.00	180.00	.00

T-INF	P-INF	Q-INF	V-INF	W-INF	MU-INF	RE/FT	HREF	STREF
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FI-1)	(HREF)	(HREF)
98.0	.044	1.97E	3706	3.971E-05	7.56/E-08	1.507E 06	3.449E-02	2.890E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HREF)	TBAR(TU)	REIA(TU)
10F(T)	6519			.0535		
SIDE(S)	6692	250	80		2.272E-01	2.4665E-01

PTC NO	TIME DELTIME	M(TU)	H(TU)/HREF	M(.910)	M(.910)/HREF	H(.912TU)/HREF	ST(TU)
1	3694(250) 13.01	11.65	3.866E-03	.1121	4.910E-03	.1424	3.191E-03
2	3447(250) 14.09	12.73	3.699E-03	.1072	4.597E-03	.1362	3.052E-03
3	3695(250) 14.12	12.75	3.695E-03	.1071	4.593E-03	.1361	3.049E-03
4	3448(250) 15.17	13.80	3.522E-03	.1040	4.511E-03	.1308	2.930E-03
5	3696(250) 15.19	13.83	3.548E-03	.1029	4.507E-03	.1306	2.928E-03
6	3697(250) 16.27	14.91	3.418E-03	.0991	4.341E-03	.1258	2.820E-03
7	3449(250) 16.27	14.91	3.418E-03	.0991	4.341E-03	.1258	2.820E-03
8	3450(250) 17.24	15.98	3.361E-03	.0957	4.192E-03	.1215	2.723E-03
9	3698(250) 17.27	16.01	3.298E-03	.0956	4.189E-03	.1214	2.721E-03
10	3451(250) 18.42	17.06	3.173E-03	.0926	4.058E-03	.1176	2.635E-03
11	3699(250) 18.45	17.08	3.173E-03	.0925	4.055E-03	.1175	2.633E-03
12	3452(250) 19.20	18.13	3.099E-03	.0898	3.935E-03	.1141	2.557E-03
13	3700(250) 19.22	18.16	3.097E-03	.0898	3.933E-03	.1140	2.555E-03
14	3453(250) 20.27	19.21	3.011E-03	.0873	3.824E-03	.1108	2.483E-03
15	3701(250) 20.29	19.24	3.009E-03	.0872	3.821E-03	.1107	2.481E-03
16	3454(250) 21.25	20.25	2.940E-03	.0849	3.721E-03	.1079	2.417E-03
17	3702(250) 21.27	20.31	2.928E-03	.0848	3.719E-03	.1078	2.414E-03
18	3455(250) 22.75	21.39	2.853E-03	.0827	3.624E-03	.1050	2.353E-03
19	3703(250) 22.78	21.41	2.852E-03	.0827	3.622E-03	.1050	2.352E-03
20	3456(250) 23.23	22.46	2.784E-03	.0807	3.538E-03	.1025	2.295E-03
21	3704(250) 23.25	22.49	2.783E-03	.0806	3.534E-03	.1024	2.295E-03
22	3457(250) 24.20	23.54	2.720E-03	.0788	3.452E-03	.1001	2.242E-03
23	3705(250) 24.23	23.57	2.718E-03	.0788	3.452E-03	.1000	2.240E-03
24	3458(250) 25.28	24.62	2.660E-03	.0771	3.378E-03	.0979	2.192E-03
25	3706(250) 25.30	24.64	2.658E-03	.0770	3.376E-03	.0978	2.191E-03

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5/26/73

NASA-WI SIS OHAC

AEUC (AMC INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

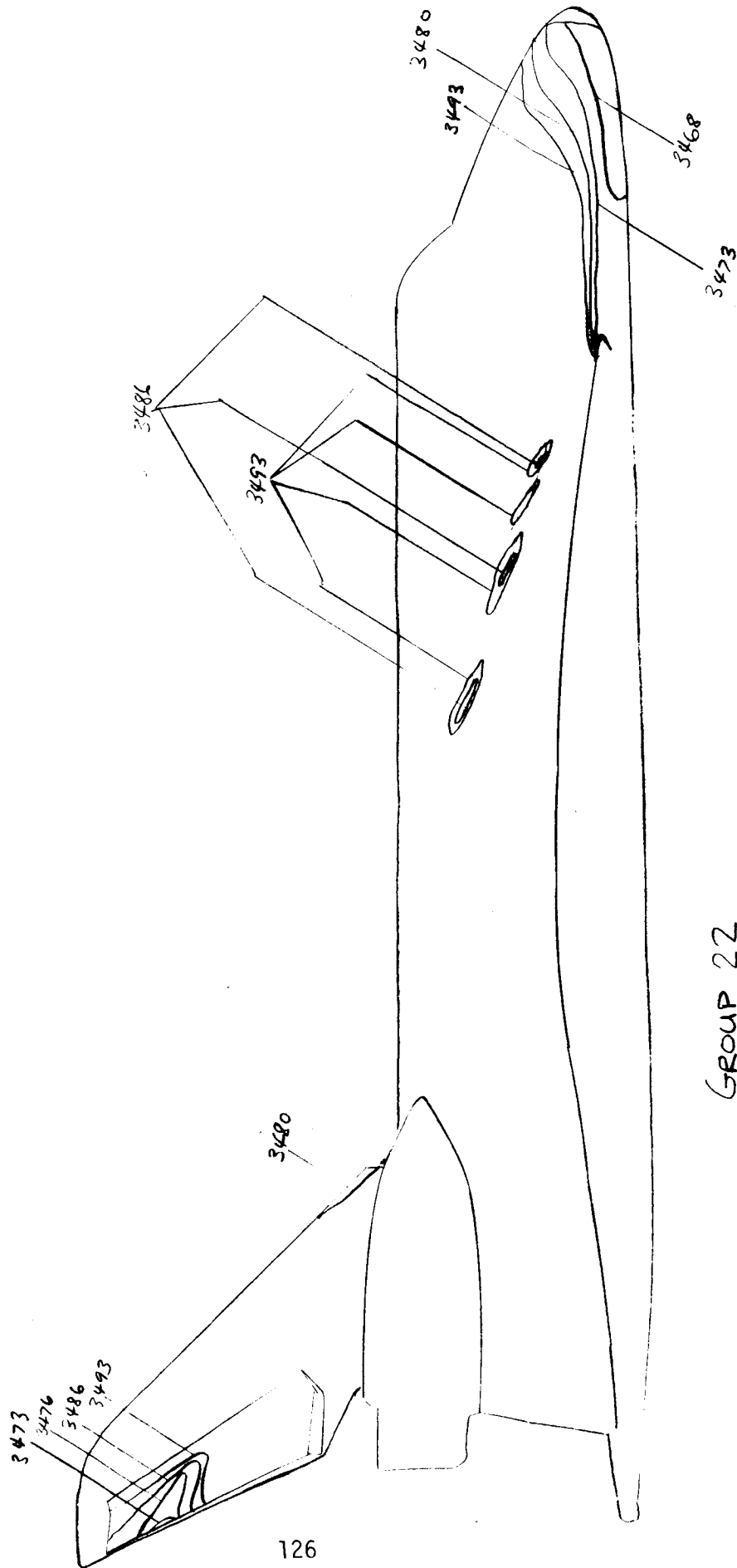
GROUP CONFIG MODEL MACH NO P0(P5IA) T0(LEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND KOLL-MODEL YAW  
 21 5 UNREITEM #2 7.97 424.4 1280 29.98 .02 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF ME/FI MREF SREF  
 (DEG H) (PSIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LH-SEC/FT<sup>3</sup>) (LH-SEC/FT<sup>3</sup>) (H<sub>2</sub>.0175FI) (H<sub>2</sub>.0175FI)  
 94.0 .045 1.941 3787 3.976E-05 7.569E-08 1.589E 06 3.451E-02 2.888E-02

CAMERA KOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAK) TBRK(TU) BETA(TU)  
 TOP(T) 6919  
 SLOC(S) 6092 250 80 .0535 2.272E-01 2.4665E-01

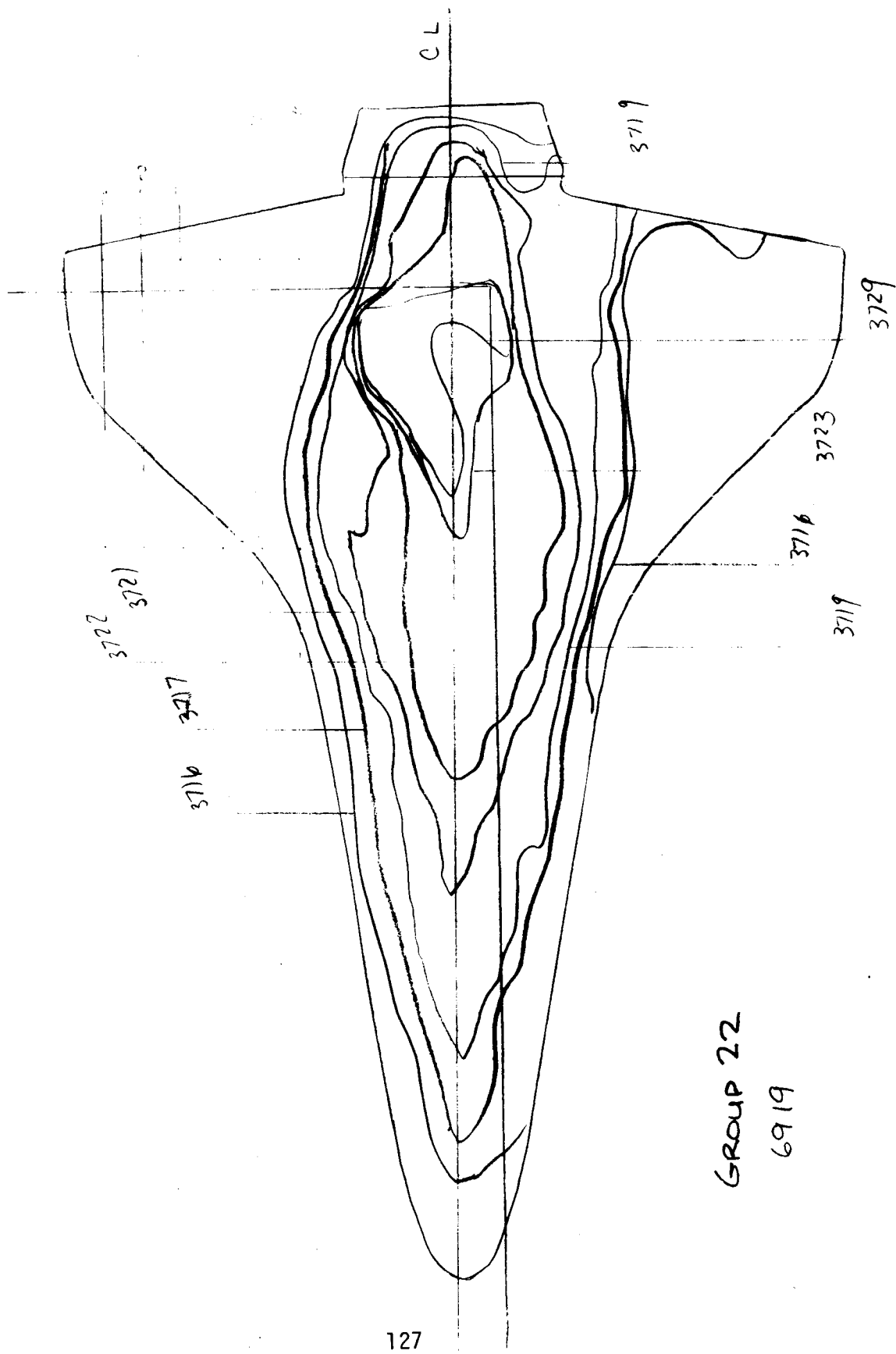
PIC NO TIME DELTIME H(TU)/HREF H(TU) H(TU)/HREF H(TU) H(TU)/HREF H(TU) H(TU)/HREF ST(TU)  
 5 3459(250) 27.06 25.69 2.603E-03 .0754 3.306E-03 .0958 3.199E-03 .0927 2.146E-03  
 1 3707(250) 27.08 25.72 2.602E-03 .0754 3.305E-03 .0958 3.197E-03 .0927 2.146E-03  
 5 3460(250) 28.13 26.77 2.550E-03 .0739 3.239E-03 .0938 3.134E-03 .0908 2.102E-03  
 1 3708(250) 28.16 26.79 2.549E-03 .0739 3.238E-03 .0938 3.132E-03 .0908 2.101E-03  
 5 3461(250) 29.21 27.85 2.501E-03 .0724 3.176E-03 .0920 3.073E-03 .0890 2.060E-03  
 1 3709(250) 29.26 27.90 2.498E-03 .0724 3.175E-03 .0919 3.070E-03 .0889 2.058E-03  
 MODEL HAS LEFT CENTERLINE  
 5 3462(250) 30.21 28.95 2.553E-03 .0711 3.115E-03 .0902 3.014E-03 .0873 2.021E-03  
 1 3710(250) 30.23 28.97 2.452E-03 .0710 3.114E-03 .0902 3.012E-03 .0873 2.020E-03  
 5 3463(250) 31.39 30.02 2.408E-03 .0698 3.059E-03 .0886 2.959E-03 .0857 1.984E-03  
 1 3711(250) 31.41 30.05 2.407E-03 .0697 3.057E-03 .0886 2.958E-03 .0857 1.983E-03

GP22  
6692  
CWC



GROUP 22  
6692

Group 22  
6919  
ms



Group 22  
6919



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 9/26/73

NASA-RI STS OH4C

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP	CONFIG	MODEL	MACH NO	PO(PSTA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
22	4	GREITER R1	7.97	423.9	1289	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	STREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R= .0175FI)	(R= .0175FI)			
94.0	.044	1.979	3787	3.971E-05	7.570E-08	1.986E 06	3.449E-02	2.890E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCKK)	TBAR(ITO)	BETA(ITO)				
10P(IT)	6919		81	.0509		0				
SIDE(S)	6692	175								

PIC NO	TIME DELTIME	H(ITO)	H(ITO)/HREF	H(.91TO)	H(.91TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(ITO)
3464(175)	.05	MODEL HAS NOT REACHED CENTERLINE		5.636E-03		5.476E-03		3.774E-03
3712(175)	.08	MODEL HAS NOT REACHED CENTERLINE		5.636E-03		5.476E-03		3.774E-03
3465(175)	1.10	MODEL HAS NOT REACHED CENTERLINE		4.529E-03		4.400E-03		3.030E-03
3713(175)	1.13	MODEL HAS NOT REACHED CENTERLINE		4.510E-03		4.382E-03		3.018E-03
3466(175)	2.18	MODEL HAS NOT REACHED CENTERLINE		3.645E-03		3.58E-03		2.589E-03
3714(175)	2.20	MODEL HAS NOT REACHED CENTERLINE		3.125E-03		3.074E-03		2.581E-03
INJECT TIME = 2.43				3.118E-03		3.066E-03		2.302E-03
3715(175)	3.28	4.555E-03	.1321	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3467(175)	3.28	4.555E-03	.1321	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3716(175)	4.36	3.660E-03	.1061	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3468(175)	4.36	3.660E-03	.1061	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3717(175)	5.43	3.125E-03	.0906	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3469(175)	5.43	3.125E-03	.0906	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3718(175)	6.51	3.118E-03	.0903	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3470(175)	6.51	3.118E-03	.0903	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3719(175)	7.61	2.779E-03	.0806	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3471(175)	7.61	2.779E-03	.0806	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3720(175)	8.66	2.528E-03	.0733	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3472(175)	8.66	2.528E-03	.0733	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3721(175)	9.79	2.330E-03	.0676	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3473(175)	9.79	2.330E-03	.0676	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3722(175)	10.84	2.175E-03	.0630	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3474(175)	10.84	2.175E-03	.0630	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3723(175)	11.91	2.048E-03	.0594	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3475(175)	11.91	2.048E-03	.0594	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3724(175)	12.99	1.941E-03	.0562	3.868E-03	.1121	3.746E-03	.0969	2.296E-03
3476(175)	12.99	1.941E-03	.0562	3.868E-03	.1121	3.746E-03	.0969	2.296E-03

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9/26/73

NASA-RI STS OM4C

VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PRÉHENO ROLL-MODEL YAW  
22 4 ORBITER R1 7.97 424.3 1289 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF RHO-INF MU-INF RE/FT HREF STREF  
(DEG H) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .0175F1) (R= .0175FT)  
94.0 .045 1.980 3787 3.974E-05 7.570E-08 1.988E 06 3.451E-02 2.889E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCK) TBAR(TO) BETA(TO)  
TOP(T) 6919 175 81 .0509 1.257E-01 1.2385E-01  
SIDE(S) 6692

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3724(175) 13.01	1.847E-03	.0535	2.285E-03	.0662	2.221E-03	.0643	1.529E-03
5	3477(175) 14.09	1.767E-03	.0512	2.167E-03	.0634	2.125E-03	.0616	1.463E-03
1	3725(175) 14.12	1.765E-03	.0511	2.144E-03	.0633	2.123E-03	.0615	1.461E-03
5	3478(175) 15.17	1.697E-03	.0492	2.100E-03	.0608	2.040E-03	.0591	1.444E-03
1	3726(175) 15.19	1.695E-03	.0491	2.098E-03	.0608	2.038E-03	.0591	1.403E-03
5	3479(175) 16.24	1.634E-03	.0473	2.022E-03	.0586	1.965E-03	.0569	1.352E-03
1	3727(175) 16.27	1.633E-03	.0473	2.021E-03	.0585	1.963E-03	.0569	1.351E-03
5	3480(175) 17.32	1.578E-03	.0457	1.953E-03	.0566	1.898E-03	.0550	1.306E-03
1	3728(175) 17.34	1.577E-03	.0457	1.951E-03	.0565	1.896E-03	.0549	1.305E-03
5	3481(175) 18.40	1.527E-03	.0442	1.890E-03	.0548	1.837E-03	.0532	1.263E-03
1	3729(175) 18.42	1.526E-03	.0442	1.889E-03	.0547	1.835E-03	.0532	1.263E-03
5	3730(175) 19.50	1.480E-03	.0429	1.832E-03	.0531	1.780E-03	.0516	1.224E-03
1	3482(175) 19.50	1.480E-03	.0429	1.832E-03	.0531	1.780E-03	.0516	1.224E-03
5	3483(175) 20.57	1.438E-03	.0416	1.780E-03	.0515	1.729E-03	.0501	1.189E-03
1	3731(175) 20.60	1.437E-03	.0416	1.779E-03	.0515	1.728E-03	.0501	1.189E-03
5	3484(175) 21.65	1.400E-03	.0405	1.732E-03	.0502	1.683E-03	.0487	1.158E-03
1	3732(175) 21.67	1.399E-03	.0405	1.731E-03	.0501	1.682E-03	.0487	1.157E-03
5	3485(175) 22.73	1.364E-03	.0395	1.688E-03	.0489	1.640E-03	.0475	1.128E-03
1	3733(175) 22.75	1.363E-03	.0395	1.687E-03	.0489	1.639E-03	.0475	1.127E-03
5	3486(175) 23.80	1.331E-03	.0385	1.647E-03	.0477	1.600E-03	.0463	1.100E-03
1	3734(175) 23.83	1.330E-03	.0385	1.646E-03	.0477	1.599E-03	.0463	1.100E-03
5	3735(175) 24.90	1.299E-03	.0376	1.608E-03	.0466	1.562E-03	.0453	1.075E-03
1	3487(175) 24.90	1.299E-03	.0376	1.608E-03	.0466	1.562E-03	.0453	1.075E-03
5	3488(175) 25.98	1.271E-03	.0368	1.572E-03	.0455	1.528E-03	.0442	1.050E-03
1	3736(175) 26.00	1.270E-03	.0368	1.572E-03	.0455	1.527E-03	.0442	1.050E-03

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9/26/73

NASA-RI STS 044C

VA352

AEDCI(ARO-INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
22	4	UREITER R1	7.97	425.0	1289	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R= .0175FI)	(R= .0175FI)			
94.0	.045	1.984	3787	3.981E-05	7.570E-08	1.991E 06	3.454E-02	2.887E-02		
CAMEGA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(ITO)	BETA(ITO)				
(OP(IT)	6919									
SIZE(S)	6692									
		175	81	.0509	1.257E-01	1.2385E-01				
PIC NO	TIME DELTIME	H(10)	H(ITO)/HREF	H(.910)	H(.912IO)/HREF	H(.912IO)/HREF	ST(ITO)			
S 3484(175)	27.06	1.244E-03	.0360	1.539E-03	.0446	1.495E-03	1.028E-03			
T 3737(175)	27.08	1.243E-03	.0360	1.538E-03	.0445	1.495E-03	1.028E-03			
S 3490(175)	28.13	1.218E-03	.0353	1.508E-03	.0437	1.465E-03	1.007E-03			
T 3738(175)	28.16	1.218E-03	.0353	1.507E-03	.0436	1.464E-03	1.006E-03			
S 3491(175)	29.21	1.195E-03	.0346	1.478E-03	.0428	1.436E-03	9.872E-04			
T 3739(175)	29.23	1.194E-03	.0346	1.478E-03	.0428	1.436E-03	9.872E-04			
S 3492(175)	30.48	1.172E-03	.0339	1.451E-03	.0420	1.409E-03	9.687E-04			
T 3740(175)	30.51	1.172E-03	.0339	1.450E-03	.0420	1.409E-03	9.687E-04			
S 3493(175)	31.39	1.151E-03	.0333	1.424E-03	.0412	1.383E-03	9.505E-04			
T 3741(175)	31.41	1.150E-03	.0333	1.423E-03	.0412	1.383E-03	9.505E-04			
		MODEL HAS LEFT CENTERLINE								
S 3494(175)	32.09	1.130E-03	.0327	1.399E-03	.0405	1.359E-03	9.346E-04			
T 3742(175)	32.46	1.130E-03	.0327	1.398E-03	.0405	1.359E-03	9.346E-04			



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9/26/73

WASA-HI SIS OHAC  
 AEDC(AHO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H  
 VA352

GROUP CONFIG MODEL MALM NO P(PSIA) I(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 23 10 UNRETIEM H7 7.97 424.9 1250 35.03 -5.03 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF HRO-INF MU-INF HE/FI HREF SREF  
 (UEG H) (PSIA) (PI/SEC) (SLUGS/FI3) (LH-SLUG/FI2) (FI-1) (ME .0175FI) (ME .0175FI)  
 94.1 .042 1.963 3769 3.979E-05 7.57E-08 1.587E 06 3.454E-02 2.889E-02

CAMERA HULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAK) TBAK(TO) BETA(TO)  
 10P(1) 0519  
 SILE(5) 0592 350 83 .0550 0 0

PIC NO TIME DELTIME H(10) H(TO)/HREF M(-910) M(.910)/HREF H(.92310)/HREF SI(10)

3 3495(350) 3.23 1.88 1.80E-02 .5218 2.406E-02 .6963 2.231E-02 .6458 1.476E-02  
 1 3743(350) .03 MODEL HAS NOT REACHED CENTERLINE  
 1 3743(350) .05 MODEL HAS NOT REACHED CENTERLINE  
 1 3744(350) 1.08 MODEL HAS NOT REACHED CENTERLINE  
 3 3496(350) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 1 3745(350) 2.18 MODEL HAS NOT REACHED CENTERLINE  
 3 3497(350) 2.18 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.40

3 3498(350) 3.23 1.88 1.80E-02 .5218 2.406E-02 .6963 2.231E-02 .6458 1.476E-02  
 1 3746(350) 3.25 1.90 1.79E-02 .5184 2.390E-02 .6918 2.217E-02 .6417 1.467E-02  
 3 3499(350) 4.20 2.96 1.43E-02 .4101 1.918E-02 .5552 1.779E-02 .5150 1.177E-02  
 1 3747(350) 4.23 2.98 1.43E-02 .4144 1.910E-02 .5529 1.772E-02 .5128 1.172E-02  
 3 3500(350) 5.38 4.03 1.231E-02 .3504 1.643E-02 .4755 1.564E-02 .4411 1.008E-02  
 1 3748(350) 5.41 4.06 1.227E-02 .3552 1.637E-02 .4740 1.519E-02 .4396 1.005E-02  
 3 3501(350) 5.46 5.11 1.094E-02 .3166 1.459E-02 .4225 1.354E-02 .3919 8.959E-03  
 1 3749(350) 5.48 5.13 1.091E-02 .3154 1.456E-02 .4214 1.350E-02 .3909 8.935E-03  
 3 3502(350) 7.53 6.18 9.44E-03 .2877 1.326E-02 .3839 1.230E-02 .3561 8.140E-03  
 1 3750(350) 7.56 6.21 9.42E-03 .2871 1.324E-02 .3831 1.228E-02 .3554 8.124E-03  
 3 3503(350) 8.61 7.26 9.17E-03 .2652 1.224E-02 .3543 1.135E-02 .3286 7.513E-03  
 1 3751(350) 8.63 7.29 9.15E-03 .2651 1.222E-02 .3537 1.133E-02 .3281 7.500E-03  
 3 3504(350) 9.69 8.34 8.50E-03 .2478 1.142E-02 .3306 1.050E-02 .3067 7.012E-03  
 1 3752(350) 9.71 8.36 8.54E-03 .2474 1.141E-02 .3302 1.058E-02 .3062 7.001E-03  
 3 3505(350) 10.76 9.41 8.05E-03 .2333 1.075E-02 .3112 9.972E-03 .2887 6.601E-03  
 1 3753(350) 10.79 9.44 8.04E-03 .2329 1.074E-02 .3108 9.959E-03 .2883 6.591E-03  
 3 3506(350) 11.84 10.49 7.63E-03 .2209 1.018E-02 .2948 9.440E-03 .2735 6.252E-03  
 1 3754(350) 11.86 10.51 7.62E-03 .2207 1.017E-02 .2944 9.435E-03 .2731 6.243E-03  
 3 3507(350) 12.51 11.51 7.26E-03 .2104 9.699E-03 .2808 8.994E-03 .2604 5.954E-03

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9/26/73

AEGC (AMC) INC. J. ARNOLD AFS, TENNESSEE  
 YOUNG KAMMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

NASA-MI STS UM4C

VAJ52

GROUP CONFIG MODEL MACH NO PO (PSIA) TO (DEG M) ALPHA-SECTION ALPHA-PREHEAT COLL-MODEL YAW  
 23 16 CRITERION M7 1.97 425.0 12.0 35.03 -5.03 -30.00 180.00 .00

T-1NF P-1NF U-1NF V-1NF MU-1NF MU-1NF RE/F1 MREF S1REF  
 (DEG M) (PSIA) (FI/SEC) (SLUGS/FT3) (LBS/SEC/FT2) (FI/1) (IN) (0.175FI) (IN) (0.175FI)  
 94.1 .045 1.984 3769 3.976E-05 7.580E-04 1.587E-04 3.454E-02 2.889E-02

CAMERA COLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SUARE ROOT (MMUACAK) TBAK(TO) REFA(TO)

TOP(T) 0.19 350 83 .0550 3.575E-01 4.4944E-01  
 SIDE(S) 6.692

PIC NO	TIME	DELTIME	M(10)	M(TO)/MREF	M(10)	M(10)/MREF	M(10)/MREF	M(10)/MREF	ST(10)
1	3755(350)	12.54	11.59	7.261E-03	2102	9.277E-03	2804	8.986E-03	5.947E-03
2	3756(350)	13.59	12.64	6.922E-03	2012	9.277E-03	2685	8.605E-03	5.694E-03
3	3757(350)	14.02	12.67	6.945E-03	2010	9.267E-03	2682	8.596E-03	5.688E-03
4	3758(350)	15.07	13.72	6.814E-03	1932	8.905E-03	2578	8.280E-03	5.469E-03
5	3759(350)	15.09	13.74	6.808E-03	1930	8.897E-03	2576	8.253E-03	5.462E-03
6	3760(350)	16.14	14.79	6.421E-03	1880	8.575E-03	2482	7.994E-03	5.263E-03
7	3761(350)	16.17	14.82	6.421E-03	1859	8.368E-03	2480	7.947E-03	5.259E-03
8	3762(350)	17.22	15.87	6.205E-03	1796	8.274E-03	2396	7.640E-03	5.081E-03
9	3763(350)	17.24	15.90	6.200E-03	1794	8.213E-03	2394	7.674E-03	5.077E-03
10	3764(350)	18.22	16.97	6.000E-03	1737	8.006E-03	2317	7.466E-03	4.914E-03
11	3765(350)	18.22	16.97	6.000E-03	1737	8.006E-03	2317	7.466E-03	4.914E-03
12	3766(350)	19.40	18.05	5.819E-03	1684	7.764E-03	2248	7.202E-03	4.767E-03
13	3767(350)	20.47	19.12	5.652E-03	1636	7.542E-03	2183	6.996E-03	4.631E-03
14	3768(350)	20.50	19.15	5.649E-03	1635	7.537E-03	2182	6.991E-03	4.627E-03
15	3769(350)	21.55	20.20	5.500E-03	1592	7.339E-03	2124	6.807E-03	4.506E-03
16	3770(350)	21.57	20.23	5.496E-03	1591	7.334E-03	2123	6.803E-03	4.503E-03
17	3771(350)	22.03	21.28	5.359E-03	1551	7.151E-03	2070	6.633E-03	4.390E-03
18	3772(350)	22.05	21.30	5.350E-03	1550	7.146E-03	2069	6.629E-03	4.387E-03
19	3773(350)	23.10	22.35	5.228E-03	1513	6.916E-03	2019	6.471E-03	4.282E-03
20	3774(350)	23.13	22.38	5.225E-03	1513	6.912E-03	2018	6.467E-03	4.280E-03
21	3775(350)	24.18	23.43	5.104E-03	1478	6.814E-03	1972	6.321E-03	4.183E-03
22	3776(350)	24.20	23.45	5.104E-03	1477	6.811E-03	1971	6.317E-03	4.180E-03
23	3777(350)	25.25	24.51	4.993E-03	1445	6.663E-03	1929	6.190E-03	4.090E-03
24	3778(350)	25.28	24.53	4.991E-03	1445	6.659E-03	1928	6.177E-03	4.089E-03

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7/26/73

NASA-HI STS 044C AEDC(AMU, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEV R) ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND MOLL-MODEL YAW  
 23 10 0REITER H7 1.97 425.0 1290 35.03 -5.03 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF MU-INF HE/FI MREF STREF  
 (UEG H) (PSIA) (FI/SEC) (SLUR3/FI3) (LR-SEC/FI2) (FI-1) (HE .0175FI) (HE .0175FI)  
 942 .045 1.924 3709 3.975E-05 7.500E-08 1.987E 06 3.454E-02 2.889E-02

CAPCHA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMUACAK) TBAH(TU) BEIA(TU)

10P(T) 6919  
 SIDE(S) 6692

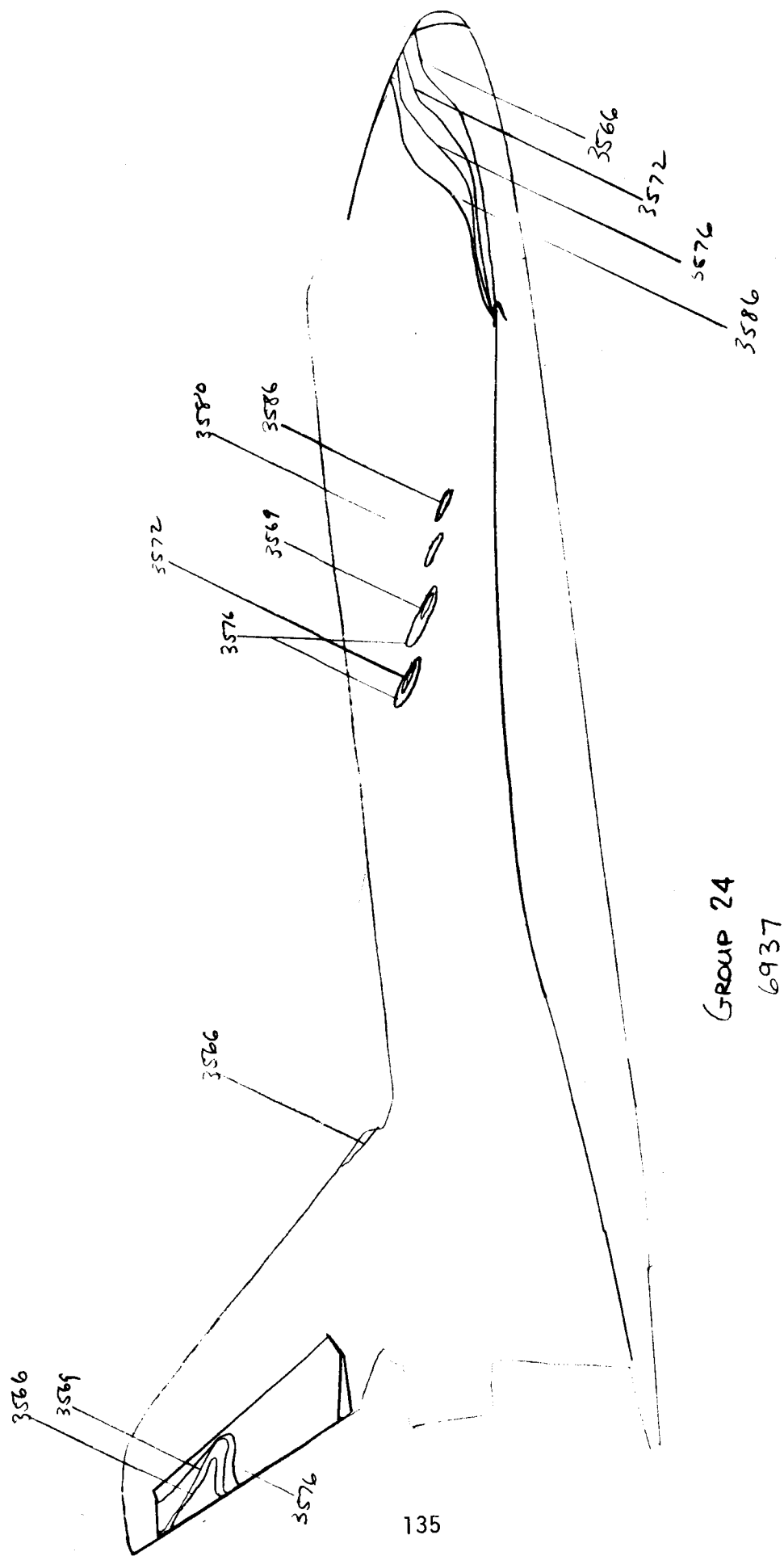
0550 3.575E-01 4.444E-01

PIC NO	TIME DELTIME	H(TU)	M(TU)/MREF	M(.910)	M(.910)/MREF	M(.92310)	M(.92310)/MREF	ST(TU)
3 3520(350)	26.93	4.807E-03	.1415	6.521E-03	.1888	6.049E-03	.1751	4.004E-03
1 3708(350)	26.56	4.825E-03	.1414	6.518E-03	.1887	6.046E-03	.1750	4.002E-03
3 3521(350)	26.01	4.788E-03	.1386	6.388E-03	.1849	5.926E-03	.1715	3.922E-03
1 3709(350)	26.04	4.785E-03	.1385	6.385E-03	.1848	5.923E-03	.1714	3.919E-03
3 3522(350)	27.08	4.694E-03	.1359	6.263E-03	.1813	5.809E-03	.1682	3.845E-03
1 3710(350)	27.11	4.692E-03	.1358	6.260E-03	.1812	5.807E-03	.1681	3.843E-03
3 3523(350)	30.16	4.605E-03	.1333	6.145E-03	.1779	5.700E-03	.1650	3.773E-03
1 3711(350)	30.18	4.603E-03	.1333	6.142E-03	.1778	5.697E-03	.1649	3.771E-03
MODEL HAS LEFT CENTERLINE								
3 3528	30.28							
1 3722(350)	31.24	4.522E-03	.1309	6.033E-03	.1747	5.598E-03	.1620	3.704E-03
3 3524(350)	31.24	4.522E-03	.1309	6.033E-03	.1747	5.598E-03	.1620	3.704E-03
1 3725(350)	32.21	4.442E-03	.1286	5.928E-03	.1716	5.498E-03	.1592	3.639E-03
3 3733(350)	32.24	4.441E-03	.1285	5.925E-03	.1715	5.496E-03	.1591	3.638E-03

GP 24

6937

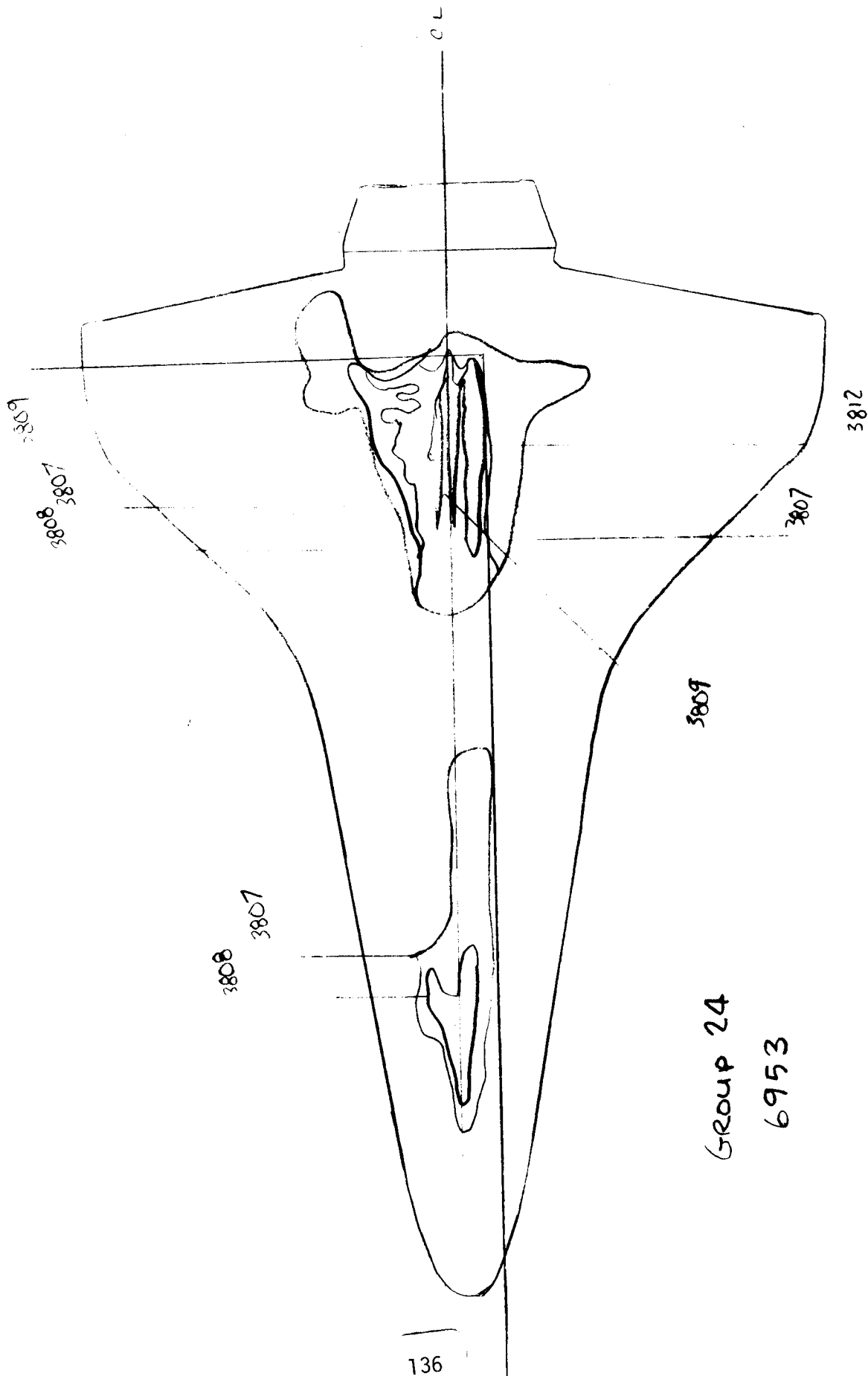
CWC



GROUP 24  
6937



Group 24  
6953  
W



Group 24  
6953

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9/26/73

NASA-HI STS 044C  
VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW  
24 5 ORBITER R2 7.97 425.4 1252 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF RMO-INF RE/FT HREF STREF  
(DEG R) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-I) (R=.0175FT) (R=.0175FT)  
9.3 .045 1.986 37.2 3.975E-05 7.589E-08 1.986E 06 3.457E-02 2.889E-02

CAVERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMO/CK) TBAR(TO) BETA(TO)  
10P(T) 6954  
SIDE(S) 6953 1/5 82 .0509 0 0

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
3555(175)	.03	MODEL HAS NOT REACHED CENTERLINE	4.561E-03	.1319	5.640E-03	.1632	5.480E-03	.1586
3556(175)	.05	MODEL HAS NOT REACHED CENTERLINE	4.530E-03	.1311	5.603E-03	.1621	5.443E-03	.1575
3557(175)	.08	MODEL HAS NOT REACHED CENTERLINE	3.628E-03	.1050	4.487E-03	.1298	4.359E-03	.1261
3558(175)	.10	MODEL HAS NOT REACHED CENTERLINE	3.628E-03	.1050	4.487E-03	.1298	4.359E-03	.1261
3559(175)	.13	MODEL HAS NOT REACHED CENTERLINE	3.112E-03	.0900	3.849E-03	.1113	3.740E-03	.1082
3560(175)	.15	MODEL HAS NOT REACHED CENTERLINE	3.103E-03	.0897	3.837E-03	.1110	3.728E-03	.1078
3561(175)	.18	MODEL HAS NOT REACHED CENTERLINE	3.103E-03	.0799	3.415E-03	.0988	3.318E-03	.0960
3562(175)	.20	MODEL HAS NOT REACHED CENTERLINE	2.755E-03	.0797	3.407E-03	.0986	3.310E-03	.0958
3563(175)	.23	MODEL HAS NOT REACHED CENTERLINE	2.513E-03	.0727	3.108E-03	.0899	3.019E-03	.0873
3564(175)	.26	MODEL HAS NOT REACHED CENTERLINE	2.508E-03	.0725	3.101E-03	.0897	3.013E-03	.0872
3565(175)	.29	MODEL HAS NOT REACHED CENTERLINE	2.317E-03	.0670	2.868E-03	.0829	2.784E-03	.0805
3566(175)	.32	MODEL HAS NOT REACHED CENTERLINE	2.313E-03	.0669	2.861E-03	.0828	2.779E-03	.0804
3567(175)	.35	MODEL HAS NOT REACHED CENTERLINE	2.101E-03	.0625	2.672E-03	.0773	2.596E-03	.0751
3568(175)	.38	MODEL HAS NOT REACHED CENTERLINE	2.158E-03	.0624	2.668E-03	.0772	2.593E-03	.0750
3569(175)	.41	MODEL HAS NOT REACHED CENTERLINE	2.035E-03	.0589	2.517E-03	.0728	2.446E-03	.0707
3570(175)	.44	MODEL HAS NOT REACHED CENTERLINE	2.032E-03	.0588	2.514E-03	.0727	2.442E-03	.0707
3571(175)	.47	MODEL HAS NOT REACHED CENTERLINE	1.927E-03	.0557	2.383E-03	.0689	2.315E-03	.0670
3572(175)	.50	MODEL HAS NOT REACHED CENTERLINE	1.925E-03	.0557	2.380E-03	.0689	2.313E-03	.0669
3573(175)	.53	MODEL HAS NOT REACHED CENTERLINE	1.834E-03	.0531	2.269E-03	.0656	2.204E-03	.0638

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9/26/73

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

NASA-RI STS 044C

VA352

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
24	5	ORBITER R2	7.97	425.3	1292	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R=.0175FI)	(R=.0175FI)		
94.3	.005	1.985	3742	3.973E-05	7.589E-08	1.985E 06	3.456E-02	2.890E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCKX)	TBAR(TO)	BETA(TO)				
LOP(T)	6554	175	82	.0509	1.241E-01	1.2202E-01				
SIDE(S)	6553									
PIC NO	TIME	DELTIME	H(TO)	HREF	H(.910)	H(.910)/HREF	H(.912TO)	HREF	SI(TO)	
1	3815(175)	12.24	1.832E-03	.0530	2.266E-03	.0656	2.202E-03	.0637	1.515E-03	
5	3568(175)	13.47	1.756E-03	.0508	2.171E-03	.0628	2.110E-03	.0610	1.451E-03	
1	3816(175)	13.89	1.756E-03	.0507	2.169E-03	.0627	2.107E-03	.0610	1.450E-03	
5	3569(175)	14.54	1.685E-03	.0487	2.084E-03	.0603	2.024E-03	.0586	1.392E-03	
1	3817(175)	14.97	1.685E-03	.0487	2.082E-03	.0602	2.022E-03	.0585	1.391E-03	
5	3570(175)	16.02	1.622E-03	.0469	2.006E-03	.0580	1.949E-03	.0564	1.340E-03	
1	3818(175)	16.04	1.620E-03	.0469	2.004E-03	.0580	1.947E-03	.0563	1.339E-03	
5	3571(175)	17.07	1.566E-03	.0453	1.937E-03	.0560	1.882E-03	.0544	1.295E-03	
1	3819(175)	17.09	1.565E-03	.0453	1.936E-03	.0560	1.881E-03	.0544	1.294E-03	
5	3572(175)	18.15	1.515E-03	.0438	1.874E-03	.0542	1.821E-03	.0527	1.253E-03	
1	3820(175)	18.17	1.514E-03	.0438	1.873E-03	.0542	1.820E-03	.0527	1.252E-03	
5	3573(175)	19.20	1.470E-03	.0425	1.818E-03	.0526	1.767E-03	.0511	1.215E-03	
1	3821(175)	19.22	1.469E-03	.0425	1.817E-03	.0526	1.765E-03	.0511	1.214E-03	
5	3574(175)	20.27	1.428E-03	.0413	1.766E-03	.0511	1.716E-03	.0496	1.180E-03	
1	3822(175)	20.30	1.427E-03	.0413	1.765E-03	.0511	1.714E-03	.0496	1.179E-03	
5	3575(175)	21.35	1.389E-03	.0402	1.718E-03	.0497	1.669E-03	.0483	1.148E-03	
1	3823(175)	21.37	1.388E-03	.0402	1.717E-03	.0497	1.668E-03	.0482	1.147E-03	
5	3576(175)	22.43	1.353E-03	.0391	1.673E-03	.0484	1.626E-03	.0470	1.118E-03	
1	3824(175)	22.45	1.352E-03	.0391	1.672E-03	.0484	1.625E-03	.0470	1.118E-03	
5	3825(175)	23.50	1.320E-03	.0382	1.632E-03	.0472	1.586E-03	.0459	1.091E-03	
1	3826(175)	23.52	1.320E-03	.0382	1.632E-03	.0472	1.586E-03	.0459	1.091E-03	
5	3577(175)	24.55	1.289E-03	.0373	1.594E-03	.0461	1.549E-03	.0448	1.066E-03	
1	3827(175)	24.58	1.289E-03	.0373	1.594E-03	.0461	1.549E-03	.0448	1.066E-03	
5	3578(175)	25.60	1.261E-03	.0365	1.559E-03	.0451	1.515E-03	.0438	1.042E-03	
1	3827(175)	25.63	1.260E-03	.0365	1.559E-03	.0451	1.515E-03	.0438	1.042E-03	

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NASA-RI STS 044C

VA352

AEDC(AHO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREREEND	ROLL-MODEL	YAW
24	5	ORBITER R2	7.97	425.4	1292	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(R= .0175FT)			
94.3	.045	1.986	3792	3.974E-05	7.589E-08	4.986E 06	3.457E-02	2.890E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHO/CXK)	TBAR(TO)	BETA(TO)				
TOP(T)	6954									
SIDE(S)	6953	175	82	.0509	1.241E-01	1.2202E-01				

PIC NO	TIME DELTIME	H(TO)	M(TO)/HREF	H(.910)/HREF	M(.910)/HREF	H(.91210)/HREF	M(.91210)/HREF	ST(TO)
3580(175)	26.68	1.234E-03	.0357	1.526E-03	.0442	1.483E-03	.0429	1.020E-03
3828(175)	26.71	1.233E-03	.0357	1.526E-03	.0441	1.482E-03	.0429	1.020E-03
3581(175)	27.76	1.209E-03	.0350	1.495E-03	.0432	1.452E-03	.0420	9.991E-04
3829(175)	27.78	1.208E-03	.0349	1.494E-03	.0432	1.452E-03	.0420	9.986E-04
3582(175)	28.81	1.185E-03	.0343	1.466E-03	.0424	1.424E-03	.0412	9.798E-04
3830(175)	28.83	1.185E-03	.0343	1.465E-03	.0424	1.424E-03	.0412	9.793E-04
3583(175)	29.68	1.163E-03	.0336	1.437E-03	.0416	1.397E-03	.0404	9.613E-04
3831(175)	29.91	1.162E-03	.0336	1.437E-03	.0416	1.397E-03	.0404	9.607E-04
3584(175)	30.56	1.141E-03	.0330	1.412E-03	.0408	1.372E-03	.0397	9.437E-04
3832(175)	30.59	1.141E-03	.0330	1.411E-03	.0408	1.371E-03	.0397	9.433E-04
3585(175)	32.01	1.122E-03	.0324	1.387E-03	.0401	1.348E-03	.0390	9.267E-04
3833(175)	32.04	1.121E-03	.0324	1.387E-03	.0401	1.347E-03	.0390	9.270E-04
3586(175)	33.09	1.102E-03	.0319	1.364E-03	.0394	1.325E-03	.0383	9.115E-04
3834(175)	33.11	1.102E-03	.0319	1.363E-03	.0394	1.324E-03	.0383	9.109E-04
3587(175)	34.14	1.085E-03	.0314	1.341E-03	.0388	1.303E-03	.0377	8.966E-04
3835(175)	34.16	1.084E-03	.0314	1.341E-03	.0388	1.303E-03	.0377	8.963E-04
MODEL HAS LEFT CENTERLINE								
3588(175)	35.22	1.067E-03	.0309	1.320E-03	.0382	1.282E-03	.0371	8.824E-04
3836(175)	35.24	1.067E-03	.0309	1.320E-03	.0382	1.282E-03	.0371	8.821E-04
3589(175)	36.29	1.051E-03	.0304	1.300E-03	.0376	1.263E-03	.0365	8.688E-04
3837(175)	36.32	1.050E-03	.0304	1.299E-03	.0376	1.262E-03	.0365	8.684E-04
3590(175)	37.24	1.035E-03	.0299	1.280E-03	.0370	1.244E-03	.0360	8.550E-04
3838(175)	37.37	1.035E-03	.0299	1.280E-03	.0370	1.244E-03	.0360	8.555E-04

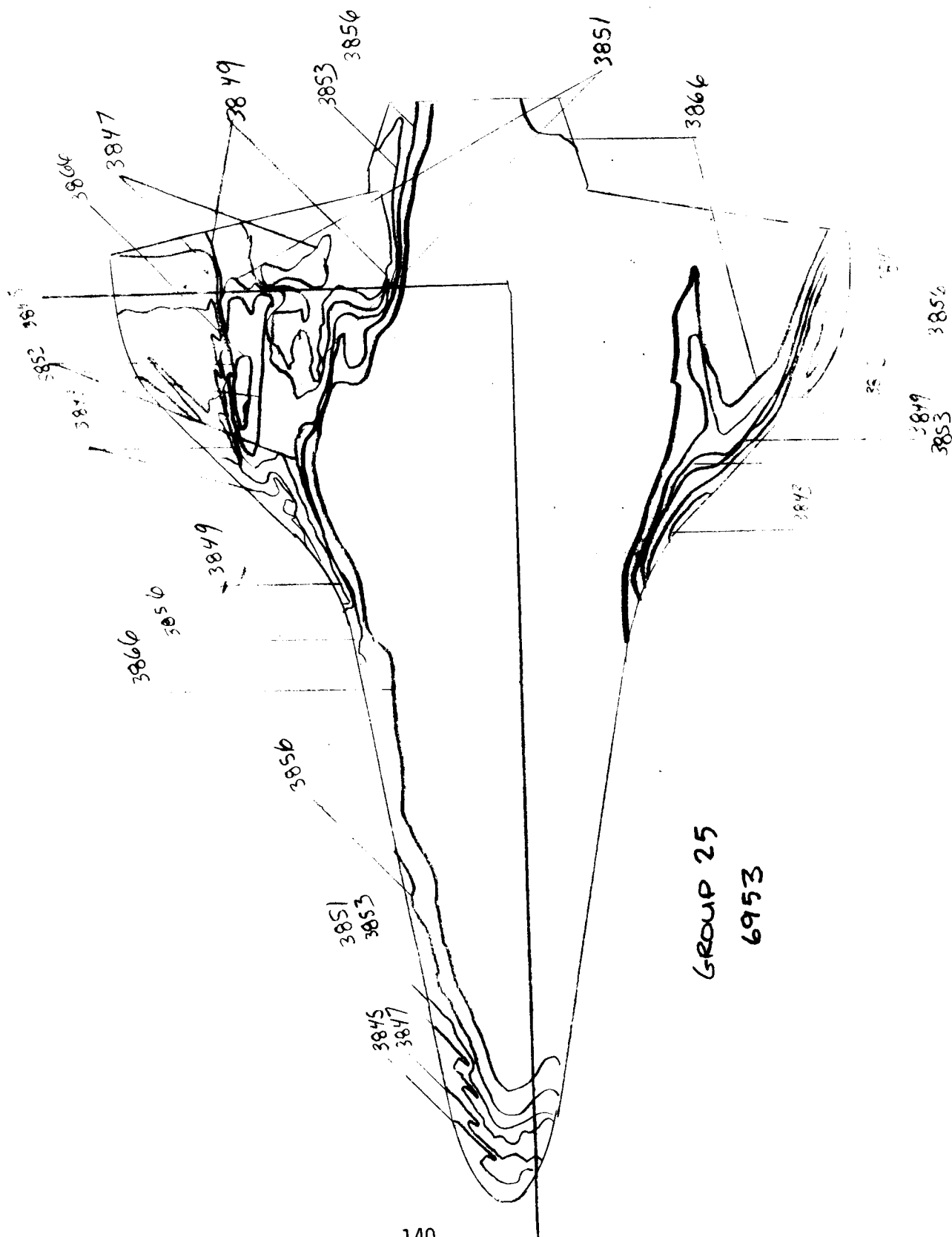
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9/26/73

NASA-RI SIS OH4C

VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 25 9 ORBITER R6 7.97 424.5 1293 35.00 -5.00 -30.00 180.00 .00  
 T-INF Q-INF P-INF V-INF RHO-INF MU-INF RE/FT HREF SIREF  
 (DEG R) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .0175FT) (M= .0175FT)  
 94.4 .045 1.981 3793 3.962E-05 7.596E-08 1.979E 06 3.454E-02 2.894E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCKX) TBAR(TO) BETA(TO)  
 TOP(T) 6954  
 SIDE(S) 6953 350 81 .0550 0 0

PIC NO	TIME DELTIME	H(10)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.92310)	H(.92310)/HREF	ST(TO)
3834(350)	.05	MODEL HAS NOT REACHED CENTERLINE						
3591(350)	.05	MODEL HAS NOT REACHED CENTERLINE						
3840(350)	1.10	MODEL HAS NOT REACHED CENTERLINE						
3593(350)	2.15	MODEL HAS NOT REACHED CENTERLINE						
3841(350)	2.18	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.43								
3594(350)	3.23	1.812E-02	.5243	2.414E-02	.6986	2.241E-02	.6484	1.486E-02
3842(350)	3.25	1.800E-02	.5209	2.398E-02	.6940	2.226E-02	.6441	1.476E-02
3595(350)	4.28	1.449E-02	.4193	1.931E-02	.5587	1.792E-02	.5185	1.188E-02
3843(350)	4.30	1.443E-02	.4175	1.922E-02	.5563	1.784E-02	.5163	1.183E-02
3596(350)	5.36	1.238E-02	.3583	1.650E-02	.4774	1.532E-02	.4431	1.015E-02
3844(350)	5.38	1.235E-02	.3572	1.645E-02	.4759	1.527E-02	.4417	1.012E-02
3597(350)	6.43	1.049E-02	.3180	1.465E-02	.4237	1.359E-02	.3932	9.008E-03
3845(350)	6.46	1.046E-02	.3172	1.461E-02	.4227	1.356E-02	.3923	8.946E-03
3598(350)	7.51	9.943E-03	.2888	1.330E-02	.3848	1.235E-02	.3572	8.182E-03
3847(350)	7.56	9.933E-03	.2888	1.330E-02	.3848	1.235E-02	.3572	8.182E-03
3599(350)	8.58	9.225E-03	.2669	1.229E-02	.3556	1.141E-02	.3300	7.561E-03
3848(350)	8.64	9.209E-03	.2664	1.227E-02	.3550	1.139E-02	.3295	7.548E-03
3600(350)	9.64	8.604E-03	.2489	1.146E-02	.3317	1.062E-02	.3078	7.052E-03
3849(350)	9.66	8.591E-03	.2485	1.145E-02	.3311	1.062E-02	.3073	7.039E-03
3601(350)	10.71	8.044E-03	.2341	1.078E-02	.3119	1.001E-02	.2895	6.632E-03
3849(350)	10.74	8.043E-03	.2338	1.077E-02	.3115	1.001E-02	.2891	6.623E-03
3602(350)	11.79	7.664E-03	.2217	1.021E-02	.2954	9.478E-03	.2741	6.279E-03
3850(350)	11.81	7.655E-03	.2214	1.020E-02	.2951	9.467E-03	.2739	6.273E-03
3603(350)	12.84	7.305E-03	.2113	9.733E-03	.2815	9.034E-03	.2613	5.985E-03

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 9/26/73

NASA-RI STS OH4C  
 VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 25 9 ORBITER R6 7.97 425.4 1293 35.00 -5.00 -30.00 180.00 .00

I-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF S/REF  
 (DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.0175FT) (R=.0175FT)  
 9.4.4 .045 1.986 3794 3.970E-05 7.597E-08 1.983E 06 3.457E-02 2.891E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOCXK) YBAR(10) BETA(10)  
 10P(1) 6554  
 510E(5) 6553 350 81 .0550 3.577E-01 4.4995E-01

PIC NO	TIME DELTIME	H(10)/HREF	H(.910)	H(.970)/HREF	H(.923T0)/HREF	ST(10)
I 3851(350)	12.86	11.50	7.23E-03	.2812	9.024E-03	.2610
S 3604(350)	13.52	12.55	6.985E-03	.2692	8.638E-03	.2499
I 3852(350)	13.54	12.58	9.297E-03	.2689	8.629E-03	.2496
S 3605(350)	14.59	13.63	8.932E-03	.2583	8.290E-03	.2397
I 3853(350)	15.02	13.65	6.677E-03	.1937	8.282E-03	.2395
S 3606(350)	16.04	14.68	6.659E-03	.1868	7.988E-03	.2310
I 3854(350)	16.07	14.71	6.453E-03	.1866	7.981E-03	.2308
S 3607(350)	17.12	15.76	6.234E-03	.1803	7.710E-03	.2229
I 3855(350)	17.14	15.78	6.229E-03	.1802	7.704E-03	.2228
S 3608(350)	18.20	16.83	6.032E-03	.1744	7.459E-03	.2157
I 3856(350)	18.22	16.86	6.027E-03	.1743	7.454E-03	.2155
S 3609(350)	19.27	17.91	5.848E-03	.1691	7.232E-03	.2091
I 3857(350)	19.27	17.91	5.848E-03	.1691	7.232E-03	.2091
S 3610(350)	20.32	18.96	5.683E-03	.1643	7.028E-03	.2032
I 3858(350)	20.35	18.99	5.680E-03	.1642	7.024E-03	.2031
S 3611(350)	21.40	20.04	5.529E-03	.1598	6.837E-03	.1977
I 3859(350)	21.42	20.06	5.525E-03	.1597	6.831E-03	.1975
S 3612(350)	22.48	21.11	5.386E-03	.1557	6.661E-03	.1925
I 3860(350)	22.50	21.14	5.383E-03	.1556	6.657E-03	.1924
S 3861(350)	23.55	22.19	5.254E-03	.1519	6.497E-03	.1878
I 3862(350)	23.55	22.19	5.254E-03	.1519	6.497E-03	.1878
S 3613(350)	24.60	23.24	5.133E-03	.1484	6.348E-03	.1835
I 3864(350)	24.63	23.27	5.131E-03	.1483	6.345E-03	.1834
S 3615(350)	25.68	24.32	5.019E-03	.1451	6.206E-03	.1794
I 3863(350)	25.70	24.34	5.016E-03	.1450	6.203E-03	.1793

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9/26/73

NASA-RI STS OH4C

VA352

AEDCI(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	POI(PSIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
25	9	ORBITER R6	7.97	425.9	1293	35.00	-5.00	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(R= .0175FT)			
94.4	.045	1.988	3794	3.975E-05	7.598E-08	1.985E 06	3.459E-02	2.890E-02		
CAVEIRA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(ITO)	BETA(ITO)				
10P(T)	6954									
SIDE(S)	6953	350	81	.0550	3.577E-01	4.4995E-01				

PIC NO	TIME DELTIME	H(ITO)	M(TO)/HREF	M(.910)	M(.910)/HREF	M(.92310)	M(.92310)/HREF	ST(ITO)
S 3616(350)	26.76	4.911E-03	.1419	6.544E-03	.1891	6.073E-03	.1755	4.018E-03
T 3864(350)	26.78	4.909E-03	.1419	6.540E-03	.1890	6.070E-03	.1755	4.016E-03
S 3617(350)	27.81	4.812E-03	.1391	6.412E-03	.1853	5.951E-03	.1720	3.937E-03
T 3865(350)	27.83	4.810E-03	.1390	6.409E-03	.1853	5.949E-03	.1720	3.936E-03
S 3618(350)	28.88	4.717E-03	.1364	6.286E-03	.1817	5.834E-03	.1686	3.860E-03
T 3866(350)	28.91	4.715E-03	.1363	6.283E-03	.1816	5.831E-03	.1685	3.858E-03
MODEL HAS LEFT CENTERLINE								
S 3619(350)	29.86	4.628E-03	.1338	6.166E-03	.1783	5.723E-03	.1655	3.788E-03
T 3867(350)	29.98	4.626E-03	.1337	6.163E-03	.1782	5.721E-03	.1654	3.786E-03



GP 26  
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CWC

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3645

3627  
3630  
3642

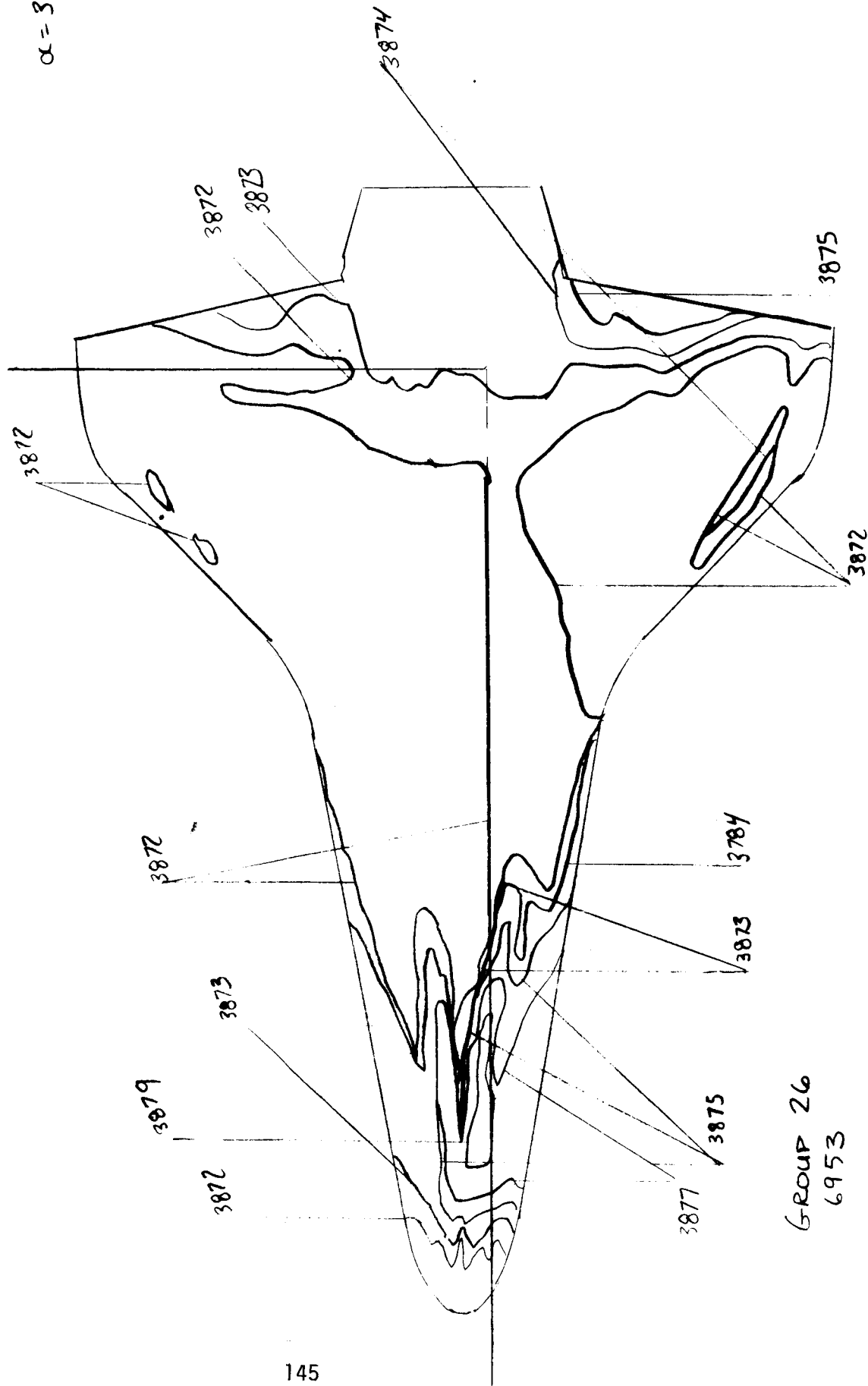
Group 26  
6937

Group 26

6953

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Group 26  
6953

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 9/26/73

NASA-RI STS OH4C  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
26	10	ORBITER R7	7.97	423.8	1295	34.99	-4.99	-30.00	180.00	.00
T-INF	P-INF	U-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	STREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175F1)	(R= .0175F1)		
94.5	.044	1.978	3796	3.949E-05	7.608E-08	1.971E 06	3.451E-02	2.900E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(TO)	BETA(TO)				
10P(T)	6954									
SIZE(S)	6953	250	84	.0535	0	0				

PIC NO	TIME DELTIME	H(10)	H(TO)/HREF	H(.910)	H(.923TO)	H(.923TO)/HREF	ST(TO)
3623(250)	.03	MODEL HAS NOT REACHED CENTERLINE	2724	1.192E-02	1.123E-02	.3252	7.775E-03
3624(250)	.05	MODEL HAS NOT REACHED CENTERLINE	2706	1.184E-02	1.115E-02	.3230	7.725E-03
3625(250)	1.08	MODEL HAS NOT REACHED CENTERLINE	2163	9.472E-03	8.918E-03	.2583	6.178E-03
3626(250)	1.10	MODEL HAS NOT REACHED CENTERLINE	2155	9.432E-03	8.800E-03	.2572	6.151E-03
3627(250)	2.15	MODEL HAS NOT REACHED CENTERLINE	1849	8.096E-03	7.622E-03	.2208	5.279E-03
3628(250)	2.43	MODEL HAS NOT REACHED CENTERLINE	1843	8.070E-03	7.598E-03	.2201	5.262E-03
3629(250)	3.20	MODEL HAS NOT REACHED CENTERLINE	1641	7.185E-03	6.765E-03	.1959	4.685E-03
3630(250)	3.23	MODEL HAS NOT REACHED CENTERLINE	1640	7.185E-03	6.765E-03	.1959	4.685E-03
3631(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1490	6.539E-03	6.157E-03	.1783	4.263E-03
3632(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1490	6.539E-03	6.157E-03	.1783	4.263E-03
3633(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1377	6.030E-03	5.678E-03	.1644	3.932E-03
3634(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1375	6.020E-03	5.668E-03	.1642	3.925E-03
3635(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1285	5.624E-03	5.296E-03	.1534	3.667E-03
3636(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1285	5.624E-03	5.296E-03	.1534	3.667E-03
3637(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1209	5.291E-03	4.981E-03	.1443	3.452E-03
3638(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1209	5.291E-03	4.981E-03	.1443	3.452E-03
3639(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1146	5.016E-03	4.723E-03	.1368	3.270E-03
3640(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1144	5.010E-03	4.717E-03	.1366	3.265E-03
3641(250)	4.28	MODEL HAS NOT REACHED CENTERLINE	1090	4.775E-03	4.496E-03	.1302	3.112E-03

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9/26/73

NASA-RI STS 04C

VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(PISA) TO(DEG R) ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW  
 26 10 ORBITER R7 7.97 424.2 1295 34.99 -4.99 -30.00 180.00 .00

T-INF P-INF Q-INF (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) MREF SREF  
 (DEG R) (DEG R) .045 1.980 3796 3.953E-05 7.608E-08 1.973E 06 3.453E-02 2.898E-02  
 94.5

CAMERA HOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCXK) TBAR(10) BEJA(10)  
 TOP(T) 6954  
 SIDE(S) 6953 250 84 .0535 2.210E-01 2.3847E-01

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.92310)	H(.92310)/HREF	ST(10)
1	3880(250)	12.86	11.50	3.762E-03	.1089	4.770E-03	.1381	3.108E-03
2	3633(250)	13.52	12.55	3.601E-03	.1043	4.566E-03	.1322	2.975E-03
3	3891(250)	13.54	12.58	3.597E-03	.1042	4.561E-03	.1321	2.972E-03
4	3882(250)	14.99	13.63	3.456E-03	.1001	4.382E-03	.1269	2.855E-03
5	3634(250)	14.99	13.63	3.456E-03	.1001	4.382E-03	.1269	2.855E-03
6	3883(250)	16.07	14.71	3.327E-03	.0963	4.219E-03	.1222	2.749E-03
7	3635(250)	16.07	14.71	3.327E-03	.0963	4.219E-03	.1222	2.749E-03
8	3636(250)	17.12	15.76	3.214E-03	.0930	4.075E-03	.1180	2.655E-03
9	3884(250)	17.14	15.78	3.211E-03	.0930	4.072E-03	.1179	2.652E-03
10	3637(250)	18.20	16.83	3.110E-03	.0900	3.943E-03	.1142	2.569E-03
11	3885(250)	18.22	16.86	3.107E-03	.0900	3.940E-03	.1141	2.567E-03
12	3886(250)	19.27	17.91	3.015E-03	.0873	3.823E-03	.1107	2.491E-03
13	3638(250)	19.27	17.91	3.015E-03	.0873	3.823E-03	.1107	2.491E-03
14	3889(250)	20.32	18.96	2.930E-03	.0848	3.715E-03	.1075	2.419E-03
15	3639(250)	20.32	18.99	2.928E-03	.0847	3.713E-03	.1075	2.418E-03
16	3890(250)	21.40	20.04	2.850E-03	.0825	3.614E-03	.1046	2.353E-03
17	3640(250)	21.42	20.06	2.848E-03	.0824	3.612E-03	.1045	2.352E-03
18	3889(250)	22.48	21.11	2.777E-03	.0804	3.521E-03	.1019	2.292E-03
19	3641(250)	22.48	21.11	2.777E-03	.0804	3.521E-03	.1019	2.292E-03
20	3890(250)	23.55	22.16	2.708E-03	.0785	3.436E-03	.0994	2.239E-03
21	3642(250)	23.55	22.19	2.708E-03	.0784	3.434E-03	.0994	2.237E-03
22	3891(250)	24.63	23.27	2.646E-03	.0766	3.356E-03	.0971	2.185E-03
23	3643(250)	24.63	23.27	2.645E-03	.0765	3.354E-03	.0971	2.183E-03
24	3891(250)	25.68	24.32	2.587E-03	.0749	3.281E-03	.0949	2.136E-03
25	3644(250)	25.68	24.32	2.586E-03	.0748	3.279E-03	.0949	2.135E-03
26	3892(250)	25.70	24.34	2.586E-03	.0748	3.279E-03	.0949	2.135E-03

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9/26/73

NASA-R1 STS 044C

AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

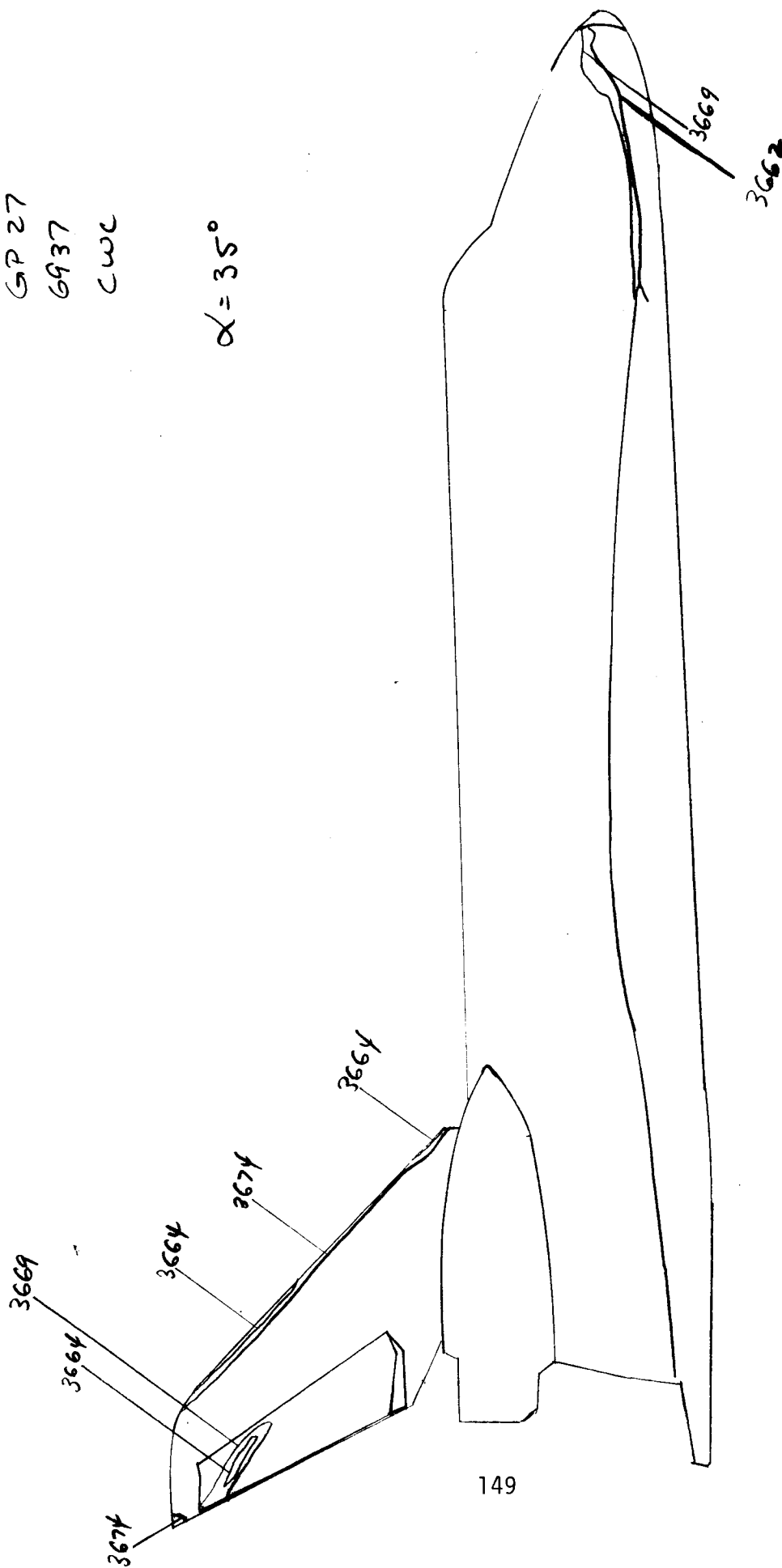
VA352

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
26	10	ORBITER R7	7.97	424.7	1295	34.99	-4.99	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FI-1)	(R= .0175FI)	(H= .0175FT)		
94.5	.045	1.982	3797	3.958E-05	7.809E-08	1.975E 06	3.455E-02	2.896E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(ITO)	BETA(ITO)				
LOP(IT)	6954		84	.0535	2.210E-01	2.3847E-01				
SIDE(S)	6953	250								
PIC NO	TIME DELTIME	H(ITO)	H(TO)/HREF	H(.910)	H(.970)/HREF	H(.92310)	H(.92310)/HREF	ST(ITO)		
S 3645(250)	26.76 25.39	2.532E-03	.0733	3.210E-03	.0929	3.023E-03	.0875	2.090E-03		
I 3893(250)	26.78 25.42	2.531E-03	.0732	3.209E-03	.0929	3.021E-03	.0874	2.088E-03		
I 3894(250)	27.83 26.47	2.480E-03	.0718	3.144E-03	.0910	2.961E-03	.0857	2.047E-03		
S 3646(250)	27.83 26.47	2.480E-03	.0718	3.144E-03	.0910	2.961E-03	.0857	2.047E-03		
S 3647(250)	28.48 27.52	2.432E-03	.0704	3.084E-03	.0892	2.903E-03	.0840	2.007E-03		
I 3895(250)	28.51 27.55	2.431E-03	.0703	3.082E-03	.0892	2.902E-03	.0840	2.006E-03		
	29.71	MODEL HAS LEFT CENTERLINE								
S 3648(250)	29.56 28.60	2.386E-03	.0690	3.025E-03	.0875	2.848E-03	.0824	1.969E-03		
I 3896(250)	29.58 28.62	2.385E-03	.0690	3.024E-03	.0875	2.847E-03	.0824	1.968E-03		

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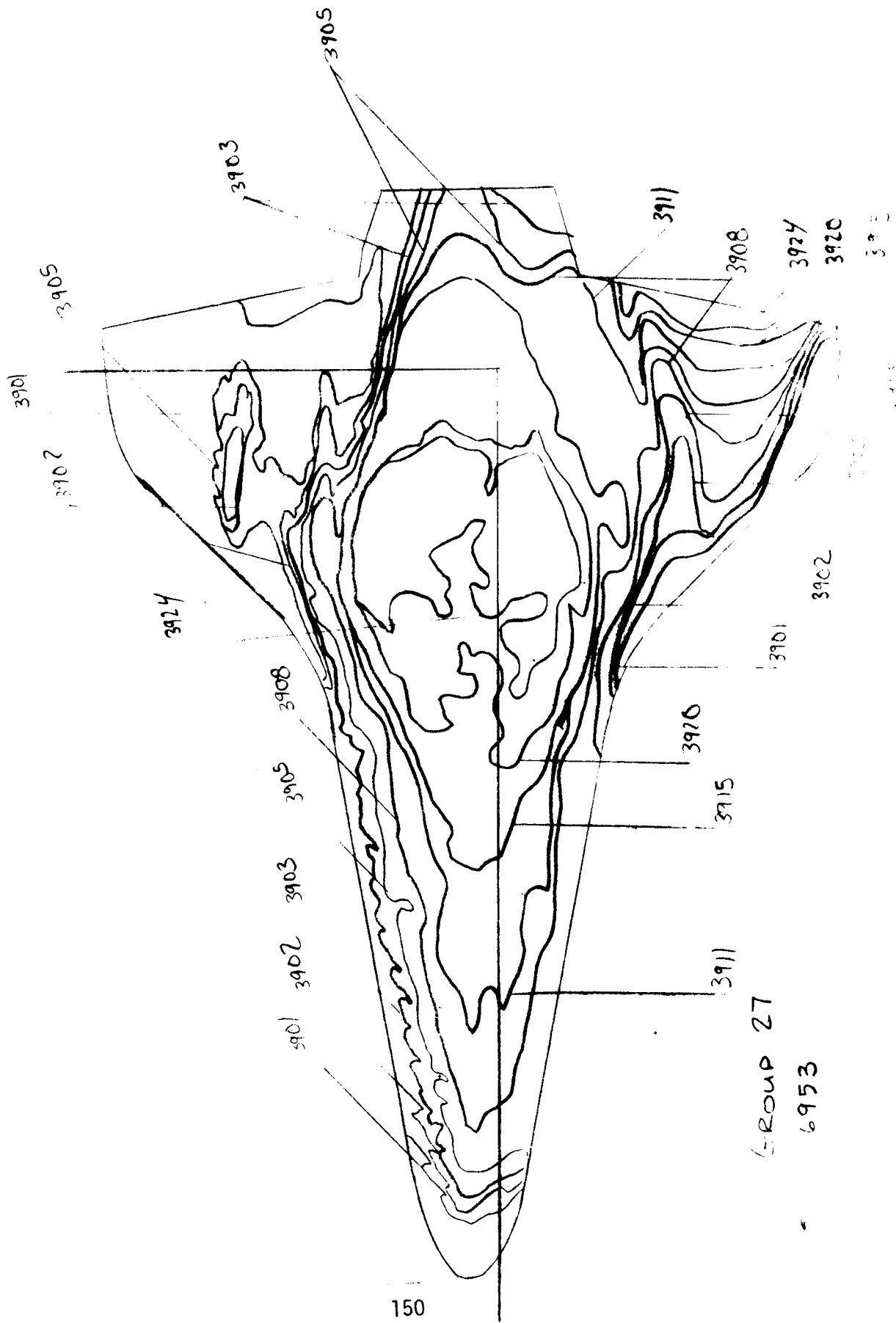
GP 27  
6937  
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GROUP 27  
6937

Group 27  
6953  
NW



Group 27  
6953

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REDC (AKO, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

050 INCH PAPER 5000

GROUP	CONFIG	MODEL	MASS NO	PO (PSIA)	TO (DEG M)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
27	9	CHELLER F6	7.97	423.2	1290	34.99	-4.99	-30.00	180.00	.00

T-INF	P-INF	Q-INF	V-INF	MMU-INF	MU-INF	ME/FI	MR/F	SIMEF
WEEK	PSIA	PSIA	FI/SEC	ISLUGS/FI3	ILH=SEC/FI2	(FI=1)	(MR=	(ME=
94.5	.044	1.075	3797	3.041E-05	7.61E-06	1.966E 06	3.049E-02	2.903E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE FOOT (HQUACAK)	TBAH(TO)	REIAT(TO)
10P (1)	6953					
BLUE(S)	6937	250	87	0.0535	0	0

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5/26/73

MASA-M1 STS ORAC  
 AEDCTARO(ING) AMNOLD AFS, TENNESSEE  
 VON KAMMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H  
 VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PRE-BEND HOLL-MODEL YAW  
 27 9 9 7.97 423.1 1276 34.99 -4.99 -30.00 180.00 .00

I-INF P-INF Q-INF V-INF MU-INF MU-INF HE/FI HREF SIMEF  
 (DEG R) (PSIA) (PSIA) (L/SEC) (SLUGS/FI) (L/SEC/FI) (L/SEC/FI) (L/SEC/FI) (L/SEC/FI) (L/SEC/FI)

94.5 .084 1.974 3797 3.940E-05 7.612E-06 1.566E 06 3.449E-02 2.903E-02

CAMERA HULL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MMXCM) TBANK(TO) BEI(ATO)

104(11) 6953  
 SITE(S) 6937 250 87 .0535 2.177E-01 2.3412E-01

PIC NO	TIME DELTIME	H(IU)	M(IU)/HREF	M(.910)	M(.910)/HREF	M(.92310)	M(.92310)/HREF	ST(IU)
1 3904(250)	12.46	11.50	3.633E-03	1.071	4.633E-03	1.358	4.610E-03	1.279
1 3910(250)	13.52	12.55	3.533E-03	1.025	4.633E-03	1.299	4.621E-03	1.223
3 3662(250)	13.52	12.55	3.533E-03	1.025	4.633E-03	1.299	4.621E-03	1.223
1 3911(250)	14.59	13.63	3.433E-03	.0983	4.302E-03	1.247	4.031E-03	1.174
3 3663(250)	14.59	13.63	3.433E-03	.0983	4.302E-03	1.247	4.031E-03	1.174
3 3664(250)	16.04	14.64	3.259E-03	.0947	4.145E-03	1.201	3.903E-03	1.131
1 3912(250)	16.07	14.71	3.266E-03	.0947	4.145E-03	1.200	3.900E-03	1.130
3 3665(250)	17.12	15.76	3.135E-03	.0914	4.001E-03	1.160	3.768E-03	1.092
1 3913(250)	17.14	15.74	3.133E-03	.0914	3.998E-03	1.159	3.765E-03	1.091
1 3914(250)	18.20	16.83	3.023E-03	.0895	3.871E-03	1.122	3.652E-03	1.056
3 3666(250)	18.20	16.83	3.023E-03	.0895	3.871E-03	1.122	3.645E-03	1.056
1 3915(250)	19.27	17.91	2.900E-03	.0858	3.753E-03	1.088	3.534E-03	1.024
3 3667(250)	19.27	17.91	2.900E-03	.0858	3.753E-03	1.088	3.534E-03	1.024
1 3916(250)	20.32	18.96	2.876E-03	.0834	3.648E-03	1.057	3.435E-03	.0995
3 3668(250)	20.35	18.99	2.875E-03	.0833	3.645E-03	1.056	3.432E-03	.0995
3 3669(250)	21.40	20.04	2.798E-03	.0811	3.548E-03	1.028	3.341E-03	.0968
1 3917(250)	21.42	20.06	2.796E-03	.0810	3.546E-03	1.027	3.339E-03	.0967
1 3918(250)	22.48	21.11	2.726E-03	.0790	3.457E-03	1.001	3.255E-03	.0943
3 3670(250)	22.48	21.11	2.726E-03	.0790	3.457E-03	1.001	3.255E-03	.0943
1 3919(250)	23.55	22.19	2.659E-03	.0770	3.372E-03	.0977	3.175E-03	.0920
3 3671(250)	23.55	22.19	2.659E-03	.0770	3.372E-03	.0977	3.175E-03	.0920
1 3920(250)	24.53	23.27	2.571E-03	.0752	3.284E-03	.0954	3.101E-03	.0898
3 3672(250)	24.53	23.27	2.571E-03	.0752	3.284E-03	.0954	3.101E-03	.0898
3 3673(250)	25.58	24.32	2.540E-03	.0736	3.221E-03	.0933	3.033E-03	.0879
1 3921(250)	25.70	24.34	2.539E-03	.0736	3.219E-03	.0933	3.031E-03	.0878

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5/26/73

NASA-HI STS OH4C

VA352

AEUC(AHU, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFID MODEL MACH NO PO(P5IA) JO(UEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND MOLL-MODEL YAW  
 27 9 UNCLASSIFIED 66 7.97 423.8 1250 34.99 -4.99 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF RHO-INF MU-INF HE/FI HREF SINEF  
 UEG-R1 (P5IA) (FI/SEC) (SLUGS/FI3) (LH-SEC/FI2) (FI-1) (HE .01/SEC) (HE .01/SEC)  
 94.5 .044 1.978 37.7 3.997E-05 7.012E-08 1.969E 06 3.452E-02 2.901E-02

CAMERA MOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MHUACAK) TBAH(TO) BETA(TO)  
 TOP(T) 6453  
 SIDE(S) 6437 250 87 .0535 2.177E-01 2.3412E-01

PIC NO	TIME DELTIME	M(TO)	M(TO)/HREF	M(.910)	M(.910)/HREF	HL .92310	HL .92310/HREF	SI(TO)
1 3922(250)	28.16	2.408E-03	.0720	3.152E-03	.0913	2.968E-03	.0860	2.057E-03
2 3674(250)	28.16	2.408E-03	.0720	3.152E-03	.0913	2.968E-03	.0860	2.057E-03
3 3675(250)	27.81	2.430E-03	.0706	3.099E-03	.0895	2.908E-03	.0842	2.015E-03
1 3923(250)	27.83	2.430E-03	.0706	3.099E-03	.0894	2.908E-03	.0842	2.015E-03
2 3676(250)	27.88	2.388E-03	.0692	3.028E-03	.0877	2.851E-03	.0826	1.975E-03
1 3924(250)	28.51	2.387E-03	.0691	3.026E-03	.0877	2.850E-03	.0825	1.974E-03
MODEL HAS LEFT CENTERLINE								
2 3677(250)	28.56	2.342E-03	.0679	2.970E-03	.0861	2.797E-03	.0810	1.939E-03
1 3925(250)	28.58	2.341E-03	.0678	2.969E-03	.0860	2.796E-03	.0810	1.938E-03



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9/26/73

NASA-HI STS 044C

VA352

AEUC(AHU, INC.) AMNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG MODEL MACH NO PO(PSIA) IU(UEG R) ALPHA=MODEL ALPHA=SECTION ALPHA=PREHEND ROLL=MODEL YAW  
 28 5 UNITEM #2 7.97 422.9 1255 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF HMO-INF MU-INF ME/FT MREF SIMEF  
 (DEG R) (PSIA) (USIA) (F/SEC) (SLUGS/FI2) (LR-SLS/FI2) (FI-1) (RE=017SEI) (RE=017SEI)  
 94.5 .044 1.973 37% 3.942E-05 7.605E-08 1.967E 06 3.447E-02 2.902E-02

CAMERA HULL NO PAINT IEMP (UEG F) INITIAL IEMP (UEG F) SQUARE ROOT (MHU/CAR) TBAH(TO) BETA(TO)  
 IUP(T) 6553  
 SIDE(S) 6537 200 82 .0519 0 0

PIC NO TIME DELTIME M(10) M(10)/HREF M(.910) M(.910)/HREF M(.91210) M(.91210)/HREF ST(10)

3 3678(200) .03 MODEL HAS NOT REACHED CENTERLINE  
 1 3620(200) .05 MODEL HAS NOT REACHED CENTERLINE  
 3 3679(200) 1.08 MODEL HAS NOT REACHED CENTERLINE  
 1 3927(200) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 1 3928(200) 2.15 MODEL HAS NOT REACHED CENTERLINE  
 3 3690(200) 2.15 MODEL HAS NOT REACHED CENTERLINE  
 INJECT TIME = 2.43

3	3681(200)	3.00	1.84	6.000E-03	.1763	7.577E-03	.2197	7.351E-03	.2132	5.050E-03
1	3929(200)	3.03	1.87	6.039E-03	.1751	7.526E-03	.2182	7.302E-03	.2117	5.016E-03
3	3682(200)	4.08	2.92	4.830E-03	.1401	6.019E-03	.1746	5.244E-03	.1694	4.013E-03
1	3930(200)	4.00	2.94	4.809E-03	.1395	5.993E-03	.1738	5.215E-03	.1687	3.997E-03
3	3931(200)	5.26	3.99	4.124E-03	.1197	5.144E-03	.1492	4.591E-03	.1447	3.288E-03
3	3683(200)	5.26	3.99	4.124E-03	.1197	5.144E-03	.1492	4.591E-03	.1447	3.288E-03
3	3684(200)	6.41	5.04	3.673E-03	.1005	4.577E-03	.1327	4.441E-03	.1287	3.048E-03
3	3932(200)	6.43	5.07	3.663E-03	.1062	4.566E-03	.1323	4.430E-03	.1284	3.041E-03
3	3685(200)	7.48	6.12	3.334E-03	.0866	4.155E-03	.1204	4.033E-03	.1169	2.767E-03
1	3933(200)	7.51	6.15	3.327E-03	.0964	4.147E-03	.1202	4.023E-03	.1166	2.762E-03
3	3686(200)	8.56	7.20	3.075E-03	.0891	3.832E-03	.1111	3.718E-03	.1078	2.552E-03
1	3934(200)	8.58	7.22	3.069E-03	.0890	3.825E-03	.1109	3.711E-03	.1076	2.547E-03
1	3935(200)	9.64	8.27	2.868E-03	.0831	3.574E-03	.1036	3.468E-03	.1005	2.380E-03
3	3687(200)	9.64	8.27	2.868E-03	.0831	3.574E-03	.1036	3.468E-03	.1005	2.380E-03
1	3936(200)	10.71	9.35	2.658E-03	.0782	3.362E-03	.0974	3.262E-03	.0945	2.238E-03
3	3688(200)	10.71	9.35	2.658E-03	.0782	3.362E-03	.0974	3.262E-03	.0945	2.238E-03
1	3937(200)	11.76	10.40	2.558E-03	.0740	3.188E-03	.0923	3.093E-03	.0896	2.122E-03
3	3690(200)	11.79	10.43	2.555E-03	.0740	3.188E-03	.0923	3.093E-03	.0896	2.122E-03
3	3690(200)	12.84	11.48	2.435E-03	.0706	3.034E-03	.0879	2.944E-03	.0853	2.020E-03

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9/26/73

NASA-HI STS 0H4C  
AEDC(AMU-INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PU(PSTA) IO(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREPEND HOLL-MODEL YAM  
28 5 UNREITER H2 7.97 424.2 1294 29.99 .01 -30.00 180.00 .00

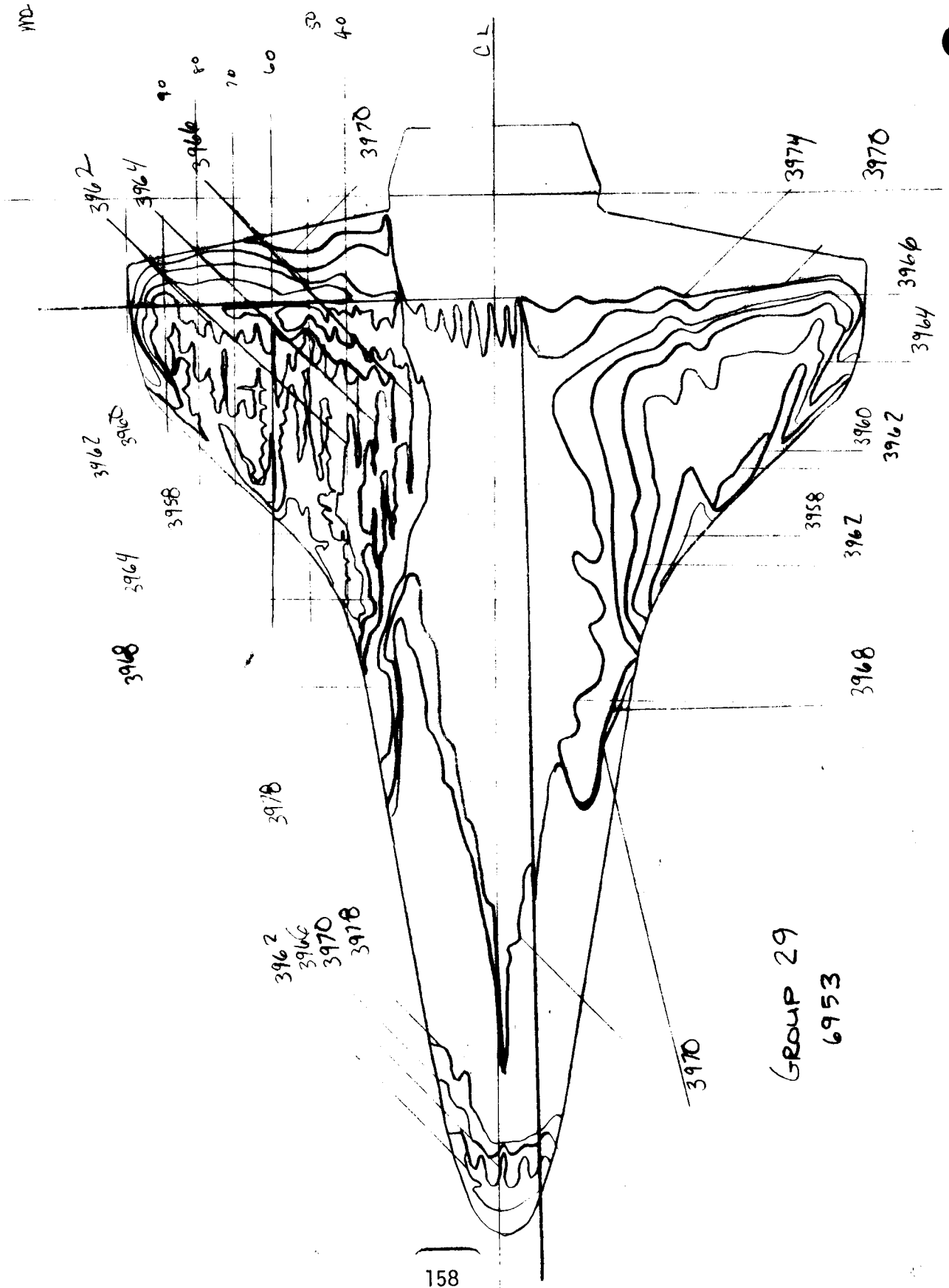
T-INF P-INF U-INF V-INF W-INF MU-INF RE/FT MREF SREF  
(UEG H) (PSTA) (FT/SEC) (SLUGS/FT3) (LH-SEC/FT2) (PI-1) (RE .0175PI) (RE .0175PI)  
94.4 .045 1.980 3795 3.956E-05 7.604E-08 1.974E 06 3.4453E-02 2.897E-02

CAMERA HOLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARED ROOT (MMUACAK) TBM(TO) REFA(TO)  
TOP(T) 6553  
SIDE(S) 6537 200 R2 .0519 1.568E-01 1.5893E-01

PIC NO	TIME DELTIME	H(10)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	HREF	ST(10)
3 3703(200)	26.76	25.39	1.637E-03	.0474	2.040E-03	.0591	1.979E-03	1.356E-03
1 3951(200)	26.74	25.42	1.630E-03	.0474	2.039E-03	.0590	1.978E-03	1.355E-03
1 3952(200)	27.83	26.47	1.633E-03	.0484	1.998E-03	.0579	1.939E-03	1.328E-03
3 3704(200)	27.83	26.47	1.633E-03	.0484	1.998E-03	.0579	1.939E-03	1.328E-03
MODEL HAS LEFT CENTERLINE								
1 3953(200)	26.91	27.55	1.572E-03	.0455	1.959E-03	.0567	1.900E-03	1.302E-03
3 3705(200)	26.91	27.55	1.572E-03	.0455	1.959E-03	.0567	1.900E-03	1.302E-03

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Group 29  
6953  
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GROUP 29  
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9/26/73

NASA-NI STS: OH4C

VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
29	10 ORBITER R7		7.99	599.4	1322	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(M= .0175FT)			
96.0	.062	2.766	3837	5.408E-05	7.732E-08	2.684E 06	4.097E-02	2.483E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(TO)	BETA(TO)				
TOP(T)	6953									
SIDE(S)	6937	450	85	.0553	0	0				

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(-.910)	H(-.910)/HREF	H(-.91210)	H(-.91210)/HREF	ST(TO)
1 3954(450)	.05	2.786E-02	.6799	3.949E-02	.9637	3.753E-02	.9158	1.645E-02
2 3706(450)	.05	2.786E-02	.6799	3.949E-02	.9637	3.753E-02	.9158	1.645E-02
3 3955(450)	1.10	2.219E-02	.5416	3.145E-02	.7677	2.989E-02	.7295	1.311E-02
4 3707(450)	1.10	2.219E-02	.5416	3.145E-02	.7677	2.989E-02	.7295	1.311E-02
5 3708(450)	2.15	1.905E-02	.4646	2.700E-02	.6586	2.565E-02	.6258	1.124E-02
6 3956(450)	2.18	1.899E-02	.4632	2.691E-02	.6566	2.557E-02	.6240	1.121E-02
7 3957(450)	3.23	1.640E-02	.4124	2.396E-02	.5845	2.277E-02	.5554	9.975E-03
8 3709(450)	3.23	1.640E-02	.4124	2.396E-02	.5845	2.277E-02	.5554	9.975E-03
9 3958(450)	4.30	1.535E-02	.3746	2.176E-02	.5310	2.068E-02	.5046	9.063E-03
10 3710(450)	4.30	1.535E-02	.3746	2.176E-02	.5310	2.068E-02	.5046	9.063E-03
11 3959(450)	5.36	1.416E-02	.3456	2.007E-02	.4899	1.908E-02	.4655	8.363E-03
12 3711(450)	5.36	1.416E-02	.3456	2.007E-02	.4899	1.908E-02	.4655	8.363E-03
13 3960(450)	6.43	1.323E-02	.3228	1.876E-02	.4575	1.782E-02	.4347	7.808E-03
14 3712(450)	6.43	1.323E-02	.3228	1.876E-02	.4575	1.782E-02	.4347	7.808E-03
15 3961(450)	7.51	1.245E-02	.3036	1.765E-02	.4303	1.677E-02	.4089	7.342E-03
16 3713(450)	7.51	1.245E-02	.3036	1.765E-02	.4303	1.677E-02	.4089	7.342E-03
17 3962(450)	8.58	1.243E-02	.3032	1.762E-02	.4297	1.674E-02	.4083	7.333E-03
18 3714(450)	8.58	1.243E-02	.3032	1.762E-02	.4297	1.674E-02	.4083	7.333E-03
19 3963(450)	9.64	1.179E-02	.2874	1.671E-02	.4074	1.588E-02	.3871	6.950E-03
20 3715(450)	9.64	1.179E-02	.2874	1.671E-02	.4074	1.588E-02	.3871	6.950E-03
21 3964(450)	10.71	1.122E-02	.2738	1.591E-02	.3881	1.512E-02	.3688	6.626E-03
22 3716(450)	10.71	1.122E-02	.2738	1.591E-02	.3881	1.512E-02	.3688	6.626E-03
23 3965(450)	11.79	1.122E-02	.2738	1.591E-02	.3881	1.512E-02	.3688	6.626E-03
24 3717(450)	11.79	1.122E-02	.2738	1.591E-02	.3881	1.512E-02	.3688	6.626E-03
25 3966(450)	12.86	1.122E-02	.2738	1.591E-02	.3881	1.512E-02	.3688	6.626E-03
26 3718(450)	12.86	1.122E-02	.2738	1.591E-02	.3881	1.512E-02	.3688	6.626E-03

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9/26/73

NASA-RI STS OH4C

VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL R

GROUP	CONFIG	MODEL	MACH NO	PO(PISA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
29	10	OREITER R7	7.99	599.8	1323	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R= .0175FT)	(R= .0175FT)		
96.1	.062	2.768	3838	5.407E-05	7.738E-08	2.682E 06	4.099E-02	2.483E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCKX)	TBAR(TO)	BETA(TO)				
IOPI(T)	6953									
SIDE(S)	6937	450	85	.0553	4.694E-01	6.8822E-01				

PIC NO	TIME DELTIME	H(TO)/HREF	H(10)/HREF	M(.9TO)/HREF	M(.912TO)/HREF	ST(TO)
1	3967(450) 13.54	1.073E-02	.2617	.3710	1.445E-02	.3525
2	3719(450) 13.54	1.073E-02	.2617	.3710	1.445E-02	.3525
3	3720(450) 14.99	1.031E-02	.2514	.3563	1.389E-02	.3386
4	3968(450) 15.02	1.030E-02	.2511	.3560	1.387E-02	.3383
5	3969(450) 16.07	9.925E-03	.2420	.3430	1.337E-02	.3259
6	3721(450) 16.07	9.925E-03	.2420	.3430	1.337E-02	.3259
7	3970(450) 17.14	9.580E-03	.2336	.3311	1.290E-02	.3147
8	3722(450) 17.14	9.580E-03	.2336	.3311	1.290E-02	.3147
9	3723(450) 18.20	9.276E-03	.2262	.3207	1.249E-02	.3047
10	3971(450) 18.22	9.269E-03	.2260	.3204	1.249E-02	.3045
11	3972(450) 19.30	8.987E-03	.2191	.3106	1.210E-02	.2952
12	3724(450) 19.30	8.987E-03	.2191	.3106	1.210E-02	.2952
13	3973(450) 20.35	8.735E-03	.2131	.3070	1.177E-02	.2870
14	3725(450) 20.35	8.735E-03	.2131	.3070	1.177E-02	.2870
15	3974(450) 21.42	8.497E-03	.2072	.2936	1.145E-02	.2790
16	3726(450) 21.42	8.497E-03	.2072	.2936	1.145E-02	.2790
17	3975(450) 22.50	8.278E-03	.2018	.2861	1.115E-02	.2718
18	3727(450) 22.50	8.278E-03	.2018	.2861	1.115E-02	.2718
19	3976(450) 23.55	8.079E-03	.1969	.2792	1.088E-02	.2653
20	3728(450) 23.55	8.079E-03	.1968	.2790	1.088E-02	.2651
21	3977(450) 24.65	7.886E-03	.1923	.2725	1.062E-02	.2590
22	3729(450) 24.65	7.886E-03	.1923	.2725	1.062E-02	.2590
23	3978(450) 25.70	7.714E-03	.1881	.2666	1.039E-02	.2533
24	3730(450) 25.70	7.714E-03	.1881	.2666	1.039E-02	.2533
25	3730(450) 25.78					

MODEL HAS LEFT CENTERLINE

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 \* UNCLASSIFIED \*  
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 9/26/73

NASA-RJ STS OH4C

VJ352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
29	10	ONEITER R7	7.99	600.7	1324	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	HHO-INF	MU-INF	RE/FT	HREF	S/REF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175F)	(R= .0175FT)		
96.2	.062	2.772	3839	5.413E-05	7.74E-08	2.684E 06	4.102E-02	2.482E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUXCAX)	TBAR(TO)	BETA(TO)				
TOP(T)	6953									
SIDE(S)	6937	450	85	.0553	4.694E-01	6.8822E-01				

PIC NO	TIME DELTIME	H(10)	H(TO)/HREF	H(.910)	M(.910)/HREF	M(.912TO)	H(.912TO)/HREF	ST(TO)
I 3979(450)	26.78	25.42	.1840	1.070E-02	.2608	1.017E-02	.2479	4.451E-03
S 3731(450)	26.78	25.42	.1840	1.070E-02	.2608	1.017E-02	.2479	4.451E-03
S 3732(450)	27.83	26.47	.1803	1.049E-02	.2556	9.964E-03	.2429	4.363E-03
I 3980(450)	27.86	26.49	.1803	1.048E-02	.2555	9.959E-03	.2428	4.361E-03

Group 30  
6953

100

R6

90

80

70

60

50

40

3992

3988

3988

3986 3992

3992

4004

4004

3992 3995

162

4004

3992 4004

3988 3988

3992

3986

4004

3988

GROUP 30  
6953

LIGHT OUT  
DEFINITION POOR

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 \* UNCLASSIFIED \*  
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 5/26/73

NASA-HI STS 044C

AEDU(AMU)INC, ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREEND ROLL-MODEL YAW  
 30 9 UNCLICH #6 7.99 599.1 1331 29.99 .01 -30.00 180.00 .00

I-INF P-INF U-INF V-INF MU-INF MU-INF RE/FI MREF SREF  
 UEG H (PSIA) (PSIA) (PI/SEC) (SLUGS/FI3) (LBS/SEC/FI2) (FI-1) (M= .0175FI) (M= .0175FI)  
 90.7 .002 2.705 3850 5.365E-05 7.784E-08 2.655E 06 4.100E-02 2.494E-02

CAPERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAR) TRAN(TU) BETA(TU)  
 10P(1) 0953  
 SUE(S) 0937 400 84 .0555 0 0

PIC NO TIME DELTME H(10) M(10)/MREF H(.910) H(-910)/MREF H(.91210) H(-91210)/MREF ST(10)

3 3733(400) .03 MODEL HAS NOT REACHED CENTERLINE  
 1 3981(400) .05 MODEL HAS NOT REACHED CENTERLINE  
 1 3982(400) 1.08 MODEL HAS NOT REACHED CENTERLINE  
 2 3734(400) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 1 3983(400) 2.15 MODEL HAS NOT REACHED CENTERLINE  
 3 3735(400) 2.15 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.43

3	3730(400)	3.60	1.84	2.105E-02	.5329	2.960E-02	.7217	2.834E-02	.6911	2.834E-02	.6911	1.298E-02
1	3984(400)	3.23	1.87	2.110E-02	.5293	2.940E-02	.7168	2.815E-02	.6864	2.815E-02	.6864	1.289E-02
1	3985(400)	3.68	2.92	1.135E-02	.5233	2.351E-02	.5732	2.251E-02	.5489	2.251E-02	.5489	1.031E-02
3	3737(400)	4.08	2.92	1.730E-02	.5233	2.351E-02	.5732	2.251E-02	.5489	2.251E-02	.5489	1.031E-02
1	3986(400)	2.36	3.99	1.444E-02	.3617	2.009E-02	.4499	1.924E-02	.4691	1.924E-02	.4691	8.811E-03
3	3738(400)	2.36	3.99	1.444E-02	.3617	2.009E-02	.4499	1.924E-02	.4691	1.924E-02	.4691	8.811E-03
3	3739(400)	5.41	5.04	1.320E-02	.3219	1.784E-02	.4359	1.712E-02	.4175	1.712E-02	.4175	7.842E-03
1	3987(400)	6.43	5.07	1.517E-02	.3211	1.784E-02	.4348	1.708E-02	.4164	1.708E-02	.4164	7.822E-03
3	3740(400)	7.38	6.12	1.118E-02	.2922	1.623E-02	.3958	1.554E-02	.3790	1.554E-02	.3790	7.119E-03
1	3988(400)	7.51	6.15	1.196E-02	.2916	1.620E-02	.3950	1.551E-02	.3782	1.551E-02	.3782	7.105E-03
1	3989(400)	8.26	7.20	1.195E-02	.2694	1.497E-02	.3649	1.433E-02	.3494	1.433E-02	.3494	6.562E-03
3	3741(400)	8.26	7.20	1.195E-02	.2694	1.497E-02	.3649	1.433E-02	.3494	1.433E-02	.3494	6.562E-03
1	3990(400)	9.64	8.27	1.031E-02	.2513	1.396E-02	.3404	1.337E-02	.3259	1.337E-02	.3259	6.122E-03
3	3742(400)	9.64	8.27	1.031E-02	.2513	1.396E-02	.3404	1.337E-02	.3259	1.337E-02	.3259	6.122E-03
3	3743(400)	10.69	9.32	9.674E-03	.2387	1.315E-02	.3206	1.259E-02	.3070	1.259E-02	.3070	5.765E-03
1	3991(400)	10.71	9.35	9.674E-03	.2364	1.313E-02	.3201	1.258E-02	.3066	1.258E-02	.3066	5.758E-03
3	3744(400)	11.76	10.40	9.193E-03	.2241	1.295E-02	.3035	1.242E-02	.2907	1.242E-02	.2907	5.459E-03
1	3992(400)	11.79	10.43	9.102E-03	.2238	1.244E-02	.3032	1.191E-02	.2903	1.191E-02	.2903	5.452E-03
3	3745(400)	12.54	11.48	8.721E-03	.2133	1.165E-02	.2889	1.135E-02	.2767	1.135E-02	.2767	5.197E-03

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 \* UNCLASSIFIED \*  
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5/26/73

NASA-MJ STS OH4C  
 VA352  
 AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFID MACH NO MU(PSTAL) 10(UEG M) ALPHA-MODEL ALPHA-SECTION ALPHA-PRE-BEND MULL-MODEL YAW  
 30 9 0.002 2.707 3850 5.372E-05 1.785E-08 2.657E-06 4.102E-02 2.493E-02 180.00 .00

T-INF P-INF Q-INF V-INF RMD-INF MU-INF RE/FI HREF SIMEF  
 (UEG M) (PSTAL) (PSTAL) (PI/SEC) (SLUGS/FT<sup>3</sup>) (LBS/SEC/FT<sup>2</sup>) (FI-L) (M=.0175FI) (M=.0175FI)  
 98.7 .002 2.707 3850 5.372E-05 1.785E-08 2.657E-06 4.102E-02 2.493E-02

CAMERA MULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MM/ACAK) TBARK(TU) BETA(10)  
 10P(T) 6553  
 SLOE(S) 6537 400 84 .0555 4.014E-01 5.3418E-01

PIC NO	TIME DELT	H(TU)	H(TU)/HREF	M(.910)	M(.910)/HREF	M(.91210)	M(.91210)/HREF	ST(10)
1	3993(400) 12.86	11.50	8.742E-03	.2131	1.184E-02	.2886	1.134E-02	.2764
1	3993(400) 13.52	12.55	8.306E-03	.2040	1.133E-02	.2753	1.085E-02	.2646
2	3746(400) 13.52	12.55	8.306E-03	.2040	1.133E-02	.2763	1.085E-02	.2646
2	3747(400) 14.57	13.63	8.038E-03	.1960	1.059E-02	.2654	1.042E-02	.2541
1	3993(400) 14.59	13.63	8.038E-03	.1958	1.058E-02	.2652	1.042E-02	.2539
1	3996(400) 14.67	14.71	7.731E-03	.1885	1.047E-02	.2553	1.003E-02	.2445
2	3748(400) 14.67	14.71	7.731E-03	.1885	1.047E-02	.2553	1.003E-02	.2445
2	3749(400) 17.12	15.76	7.459E-03	.1821	1.012E-02	.2467	9.688E-03	.2362
1	3997(400) 17.14	15.78	7.459E-03	.1820	1.011E-02	.2465	9.679E-03	.2360
1	3998(400) 18.20	16.83	7.226E-03	.1761	9.787E-03	.2385	9.372E-03	.2284
2	3750(400) 18.20	16.83	7.226E-03	.1761	9.787E-03	.2385	9.372E-03	.2284
1	3999(400) 18.27	17.91	7.006E-03	.1708	9.489E-03	.2313	9.086E-03	.2215
2	3751(400) 18.27	17.91	7.006E-03	.1708	9.489E-03	.2313	9.086E-03	.2215
2	3752(400) 20.52	18.96	6.809E-03	.1660	9.221E-03	.2248	8.830E-03	.2153
1	4000(400) 20.55	18.99	6.809E-03	.1659	9.215E-03	.2247	8.824E-03	.2151
2	3753(400) 21.40	20.04	6.623E-03	.1615	8.970E-03	.2187	8.550E-03	.2094
1	4001(400) 21.42	20.06	6.619E-03	.1614	8.965E-03	.2185	8.545E-03	.2093
1	4002(400) 22.48	21.11	6.452E-03	.1574	8.739E-03	.2131	8.308E-03	.2041
2	3754(400) 22.48	21.11	6.452E-03	.1574	8.739E-03	.2131	8.308E-03	.2041
1	4003(400) 23.55	22.19	6.294E-03	.1535	8.524E-03	.2079	8.163E-03	.1990
2	3755(400) 23.55	22.19	6.294E-03	.1535	8.524E-03	.2079	8.163E-03	.1990
1	4004(400) 24.63	23.27	6.146E-03	.1494	8.324E-03	.2029	7.972E-03	.1943
2	3756(400) 24.63	23.27	6.146E-03	.1494	8.324E-03	.2029	7.972E-03	.1943
2	3757(400) 25.68	24.32	6.012E-03	.1466	8.143E-03	.1985	7.797E-03	.1901
2	3757(400) 25.68	24.32	6.012E-03	.1466	8.143E-03	.1985	7.797E-03	.1901

108

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9/26/73

NASA-HI STS-044C

VA352

AEDC(HQ-10) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL M

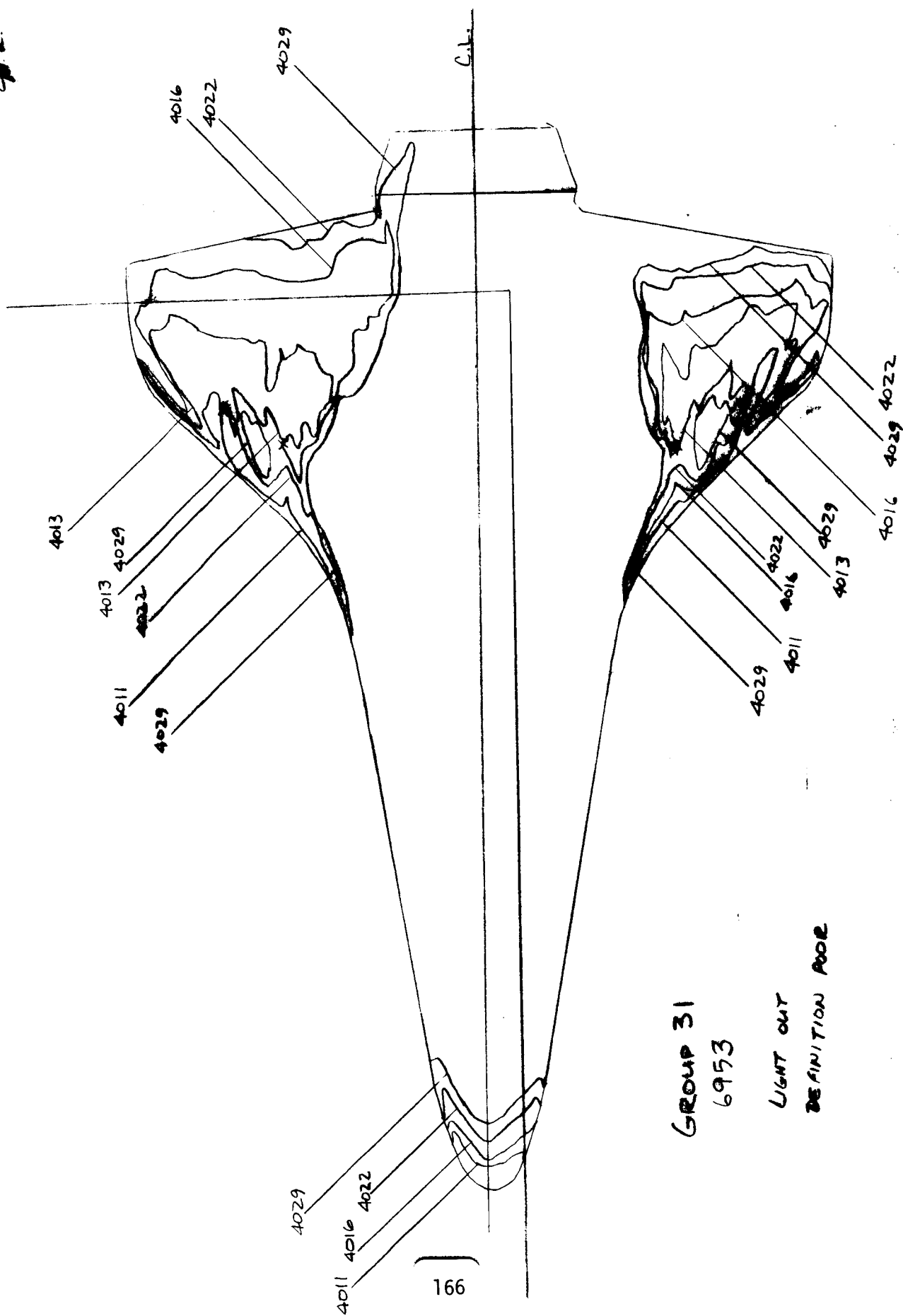
GROUP CONFIG MODEL MACH NO PD(PSTA) ID(UEG F) ALPHA-MODEL ALPHA-SECTION ALPHA-PRE-BEND MOLL-MODEL YAW  
 30 9 0REITER H6 7.99 599.5 1331 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF RE/FI HREF S/REF  
 (UEG H) (PSTA) (PSIA) (F/SEC) (SLUGS/FI3) (LH-SELF/EI2) (EI-1) (H= .0175FI) (H= .0175FI)  
 96.7 .002 2.767 3850 5.372E-05 7.784E-08 2.657E 06 4.102E-02 2.493E-02

CAMERA HULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MMUACAK) TBAK(TO) BETA(TO)  
 10P(T) 0553  
 SIVE(S) 0537 400 .0555 4.014E-01 5.3418E-01

PIC NO TIME DELTIME ML(TO) M(TO)/HREF M(.910) M(.910)/HREF M(.912(TO) M(.912(TO)/HREF ST(TO)  
 1 4005(400) 25.70 24.34 6.004E-03 .1465 8.138E-03 .1984 7.793E-03 .1900 3.569E-03

GA .P 31  
6953  
p. 2.



GROUP 31  
6953

LIGHT OUT  
DEFINITION POOR

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 \* UNCLASSIFIED \*  
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9/26/73

NASA-HI STS OHAC

AEDC(AHO, INC.) ARNOLD AFB, TENNESSEE  
 YOUNG MAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODL MACH NO PO(PSTIA) IUIDEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND ROLL-MODEL YAW  
 31 5 UNITEM H2 7.99 598.5 1330 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF RUO-INF MUO-INF ME/FI MREF SREF

IUDG H) (PSTIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LR=SEC/FT<sup>2</sup>) (FI=1) (M=.0175F1) (M=.0175F1)

96.6 .062 2.702 3847 5.370E-05 7.775E-08 2.657E 06 4.098E-02 2.493E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAN) TBAH(TO) BETA(TO)

IUP(T) 653  
 SIUE(S) 6537 400 81 .0555 0 0

PIC NO TIME DELTIME H(IU) H(IU)/HREF H(.910) M(.910)/HREF H(.91210) H(.91210)/HREF ST(IU)

3 3758(400) .03 MODEL HAS NOT REACHED CENTERLINE

1 4005(400) .05 MODEL HAS NOT REACHED CENTERLINE

1 4007(400) 1.08 MODEL HAS NOT REACHED CENTERLINE

3 3759(400) 1.10 MODEL HAS NOT REACHED CENTERLINE

1 4008(400) 2.15 MODEL HAS NOT REACHED CENTERLINE

3 3760(400) 2.15 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.43

3 3761(400) 3.20 1.84 2.211E-02 .5395 2.940E-02 .7312 2.804E-02 .7001 1.314E-02

1 4009(400) 3.23 1.87 2.170E-02 .5354 2.976E-02 .7262 2.850E-02 .6954 1.305E-02

3 3762(400) 4.28 2.92 1.757E-02 .4284 2.380E-02 .5211 2.277E-02 .5564 1.045E-02

1 4010(400) 4.30 2.94 1.749E-02 .4264 2.370E-02 .5145 2.270E-02 .5534 1.040E-02

3 3763(400) 5.36 3.99 1.501E-02 .3663 2.034E-02 .4464 1.948E-02 .4753 8.921E-03

1 4011(400) 5.36 3.99 1.501E-02 .3663 2.034E-02 .4464 1.948E-02 .4753 8.921E-03

3 3764(400) 6.43 5.07 1.332E-02 .3251 1.806E-02 .4405 1.729E-02 .4219 7.917E-03

1 4012(400) 6.43 5.07 1.332E-02 .3251 1.806E-02 .4405 1.729E-02 .4219 7.917E-03

3 3765(400) 7.48 8.12 1.213E-02 .2558 1.643E-02 .4009 1.574E-02 .3839 7.204E-03

1 4013(400) 7.51 8.15 1.210E-02 .2552 1.640E-02 .4001 1.570E-02 .3831 7.189E-03

3 3766(400) 8.56 7.20 1.118E-02 .2728 1.515E-02 .3696 1.451E-02 .3540 6.641E-03

1 4014(400) 8.58 7.22 1.118E-02 .2723 1.513E-02 .3690 1.449E-02 .3534 6.630E-03

3 3767(400) 9.54 8.27 1.043E-02 .2544 1.413E-02 .3448 1.353E-02 .3301 6.194E-03

1 4015(400) 9.54 8.27 1.043E-02 .2544 1.413E-02 .3448 1.353E-02 .3301 6.194E-03

3 3768(400) 10.71 9.35 9.811E-03 .2394 1.330E-02 .3244 1.273E-02 .3106 5.829E-03

1 4016(400) 11.79 10.43 9.251E-03 .2266 1.259E-02 .3071 1.206E-02 .2941 5.517E-03

3 3769(400) 11.79 10.43 9.251E-03 .2266 1.259E-02 .3071 1.206E-02 .2941 5.517E-03

3 3770(400) 12.54 11.48 8.855E-03 .2161 1.200E-02 .2929 1.198E-02 .2804 5.264E-03

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5/26/73

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9/26/73

NASA-HI SIS 044C

VA352

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL #

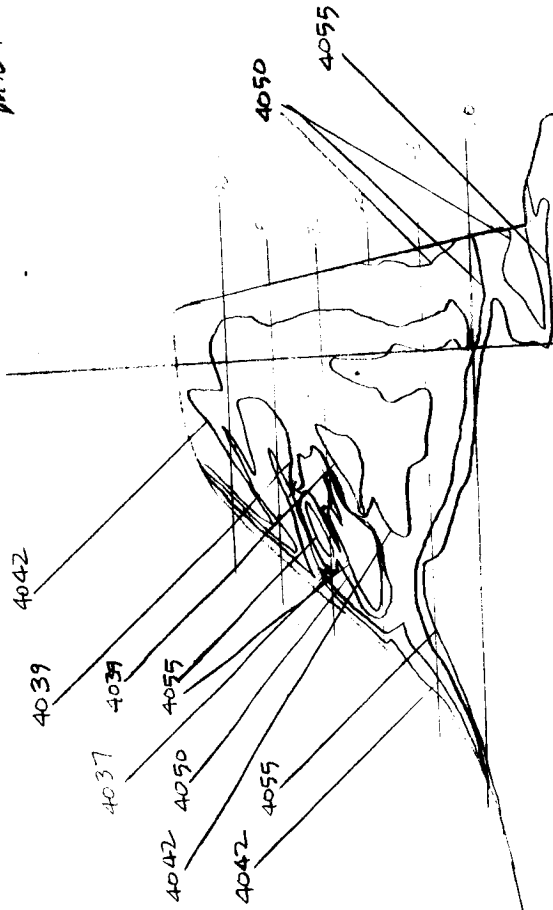
GROUP	CONFIG	MODEL	MACH NO	PO(P/SI)	TO( DEG H)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
31	5	CHETTER M2	7.99	599.8	1330	24.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	ME/FI	HREF	SIREF		
(DEG H)	(PSIA)	(FI/SEC)	(SLUGS/FI3)	(LH=SEC/EI2)	(FI-1)	(RE .0175FI)	(RE .0175FI)	(RE .0175FI)		
96.6	.002	2.76E	3847	5.382E-05	7.775E-08	2.663E-06	4.102E-02	2.491E-02		
CAMERA	MULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (MMUACAK)	THAW(TO)	BETA(TO)				
TOP(T)	6553									
SLUR(S)	6537	400	81	.0555	4.045E-01	5.4053E-01				

PIC NO	TIME DELTYPE	H(TO)	M(TO)/HREF	M(.910)	HL(.910)/HREF	HL(.91210)/HREF	SI(TO)
5	3783(400) 25.76-25.39	MODEL HAS LEFT CENTERLINE	5.953E-03	.1451	H.068E-03	.1967	3.532E-03
1	4031(400) 25.78-25.42		5.950E-03	.1451	H.064E-03	.1966	3.531E-03

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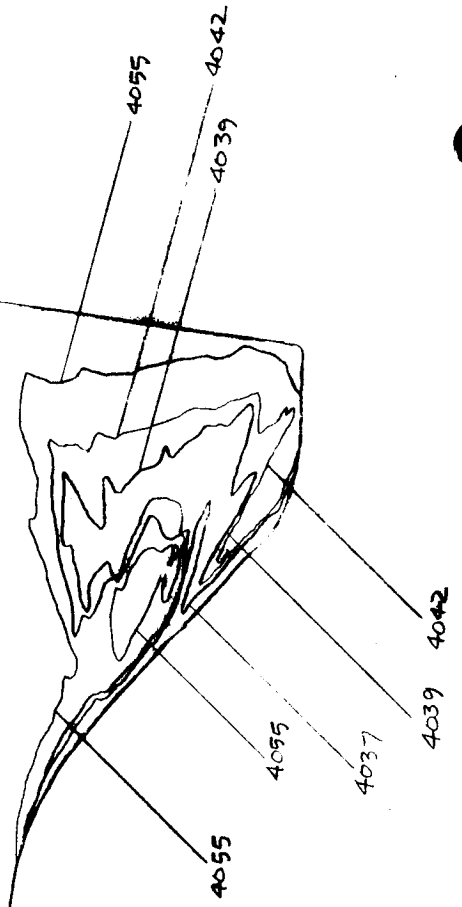
6953

Ch. 8.



NO NOSE MELT  
DEFINITION

170



Group 32  
6953

LIGHT OUT  
DEFINITION POOR

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 \* UNCLASSIFIED \*  
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5/26/73

NASA-HI STS 044C

VASJ2

AEDCTAHO(INC) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG MODEL MACH NO MU(PSIA) U(UG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREFEND MOLL-MODEL YAW  
 32 4 UNCLITEN H1 7.99 558.8 1328 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF RE/FI HREF S/REF  
 (UG H) (PSIA) (PI/SEC) (SLUGS/FT<sup>3</sup>) (LBS/SEC/FT<sup>2</sup>) (FI-1) (H= .0175FI) (H= .0175FI)  
 .002 2.763 38.5 5.378E-05 7.760E-08 2.603E 06 4.098E-02 2.491E-02

LAPEHA MOLL NO PAINT TEMP (UG F) INITIAL TEMP (UG F) SQUARE MUOT (RHUACAR) TBAH(TO) BETA(TO)  
 10P(1) 6953  
 S/UE(S) 6937 400 81 .0555 0 0

PIC NO TIME UELTIME M(10) M(10)/MREF M(.910) M(.910)/MREF M(.91210) M(.91210)/MREF ST(10)

1 4032(400) .05 MODEL HAS NOT REACHED CENTERLINE  
 S 3784(400) .05 MODEL HAS NOT REACHED CENTERLINE  
 1 4036(400) 1.08 MODEL HAS NOT REACHED CENTERLINE  
 S 3788(400) 1.08 MODEL HAS NOT REACHED CENTERLINE  
 1 4034(400) 2.15 MODEL HAS NOT REACHED CENTERLINE  
 S 3786(400) 2.15 MODEL HAS NOT REACHED CENTERLINE  
 INJECT TIME = 2.43

S 3787(400)	3.20	1.84	2.217E-02	.2411	3.007E-02	.7338	2.879E-02	.7026	1.317E-02
1 4035(400)	3.23	1.87	2.203E-02	.2475	2.987E-02	.7288	2.800E-02	.6978	1.308E-02
1 4036(400)	3.28	2.92	1.762E-02	.4297	2.389E-02	.5827	2.287E-02	.5579	1.045E-02
S 3788(400)	3.28	2.92	1.762E-02	.4297	2.389E-02	.5827	2.287E-02	.5579	1.045E-02
1 4037(400)	3.36	3.99	1.500E-02	.3673	2.042E-02	.4981	1.955E-02	.4769	8.939E-03
S 3789(400)	3.36	3.99	1.500E-02	.3673	2.042E-02	.4981	1.955E-02	.4769	8.939E-03
1 4038(400)	3.41	5.04	1.340E-02	.3264	1.810E-02	.4431	1.739E-02	.4243	7.951E-03
S 3790(400)	3.43	5.07	1.336E-02	.3260	1.812E-02	.4421	1.735E-02	.4233	7.933E-03
1 4039(400)	3.48	5.12	1.218E-02	.2997	1.649E-02	.4023	1.574E-02	.3852	7.219E-03
S 3791(400)	3.51	6.15	1.214E-02	.2961	1.640E-02	.4015	1.570E-02	.3844	7.205E-03
1 4040(400)	3.56	7.28	1.121E-02	.2736	1.521E-02	.3710	1.450E-02	.3552	6.656E-03
S 3792(400)	3.56	7.28	1.121E-02	.2736	1.521E-02	.3710	1.450E-02	.3552	6.656E-03
1 4041(400)	3.64	8.27	1.040E-02	.2552	1.410E-02	.3460	1.358E-02	.3313	6.208E-03
S 3793(400)	3.64	8.27	1.040E-02	.2552	1.410E-02	.3460	1.358E-02	.3313	6.208E-03
1 4042(400)	3.71	9.35	9.839E-03	.2339	1.334E-02	.3254	1.277E-02	.3115	5.835E-03
S 3794(400)	3.71	9.35	9.839E-03	.2339	1.334E-02	.3254	1.277E-02	.3115	5.835E-03
1 4043(400)	3.76	10.40	9.329E-03	.2275	1.265E-02	.3045	1.211E-02	.2951	5.535E-03
S 3795(400)	3.76	10.40	9.329E-03	.2275	1.265E-02	.3045	1.211E-02	.2951	5.535E-03
1 4044(400)	3.84	11.48	8.881E-03	.2166	1.204E-02	.2938	1.153E-02	.2813	5.271E-03
S 3796(400)	3.84	11.48	8.881E-03	.2166	1.204E-02	.2938	1.153E-02	.2813	5.271E-03

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9/26/73

NASA-HI STS OHAC

VA352

AEUC(AHO,INC.) AMMOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG MACH NO POS(PSIA) TO(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 32 4 UNCLASSIFIED H1 7.99 559.2 1328 29.99 .01 -30.00 180.00 .00

T-IMP P-IMP U-IMP V-IMP MU-IMP HE/FI MREF SREF  
 (UEG H) (PSIA) (PSIA) (EL/SEC) (SLUGS/EL) (LBS-SLV/EL) (EL-1) (M= .0175FI) (M= .0175FI)  
 96.5 .002 2.705 3846 5.381E-05 7.767E-08 2.664E 06 4.099E-02 2.490E-02

CAMERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MMU/CAK) TBAH(TO) BETA(TO)

TOP(T) 0553  
 SIDE(S) 0537 H1 .0555 4.053E-01 5.4208E-01

PIC NO	TIME	DELTIME	H(10)	H(10)/MREF	M(.910)	M(.910)/MREF	HL(.91210)/MREF	ST(110)
1 4044(400)	10.26	11.50	8.471E-03	.2164	1.203E-02	.2894	1.152E-02	.2809
1 4045(400)	13.52	12.55	8.471E-03	.2071	1.151E-02	.2809	1.102E-02	.2689
3 3797(400)	13.52	12.55	8.471E-03	.2071	1.151E-02	.2809	1.102E-02	.2689
1 4046(400)	14.34	13.63	8.471E-03	.1947	1.103E-02	.2695	1.058E-02	.2580
3 3798(400)	14.34	13.63	8.471E-03	.1947	1.103E-02	.2695	1.058E-02	.2580
3 3799(400)	16.14	14.68	7.852E-03	.1915	1.065E-02	.2597	1.019E-02	.2486
1 4047(400)	16.17	14.71	7.852E-03	.1913	1.065E-02	.2595	1.019E-02	.2484
3 3800(400)	17.12	15.76	7.579E-03	.1848	1.028E-02	.2506	9.840E-03	.2400
1 4048(400)	17.14	15.78	7.579E-03	.1847	1.027E-02	.2504	9.832E-03	.2398
3 3801(400)	18.20	16.83	7.333E-03	.1788	9.944E-03	.2425	9.520E-03	.2321
1 4049(400)	18.20	16.83	7.333E-03	.1788	9.944E-03	.2425	9.520E-03	.2321
3 3802(400)	19.27	17.91	7.109E-03	.1734	9.640E-03	.2351	9.230E-03	.2251
3 3803(400)	19.27	17.91	7.109E-03	.1734	9.640E-03	.2351	9.230E-03	.2251
1 4051(400)	20.32	18.96	6.899E-03	.1685	9.369E-03	.2284	8.970E-03	.2187
3 3804(400)	20.32	18.99	6.899E-03	.1684	9.369E-03	.2283	8.964E-03	.2186
3 3805(400)	21.40	20.04	6.672E-03	.1638	9.114E-03	.2223	8.728E-03	.2128
1 4052(400)	21.42	20.06	6.672E-03	.1638	9.114E-03	.2221	8.721E-03	.2127
3 3806(400)	22.48	21.11	6.548E-03	.1597	8.879E-03	.2165	8.501E-03	.2073
3 3807(400)	22.48	21.11	6.548E-03	.1597	8.879E-03	.2165	8.501E-03	.2073
1 4053(400)	23.55	22.19	6.387E-03	.1557	8.661E-03	.2112	8.292E-03	.2022
3 3808(400)	23.55	22.19	6.387E-03	.1557	8.661E-03	.2112	8.292E-03	.2022
3 3809(400)	24.63	23.27	6.237E-03	.1521	8.458E-03	.2063	8.098E-03	.1975
1 4054(400)	24.63	23.27	6.237E-03	.1521	8.458E-03	.2063	8.098E-03	.1975
3 3810(400)	25.68	24.32	6.101E-03	.1488	8.273E-03	.2018	7.921E-03	.1932
3 3811(400)	25.68	24.32	6.101E-03	.1488	8.273E-03	.2018	7.921E-03	.1932

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7/26/73

NASA-MI STS 044C

AEUC(AUG-INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL #

VA352

GROUP CONFIG MODEL MACH NO P0(PSIA) T0(DEG R) ALPHA-MODEL ALPHA-SEC FOR ALPHA-PREBEND HOLL-MODEL YAW

32 4 UMEITER #1 7.99 599.4 1320 29.99 .01 -30.00 180.00 .00

T-INF P-INF W-INF V-INF HMD-INF MU-INF RE/FI HREF SREF

(DEG R) (PSIA) (PSIA) (FI/SEC) (SLUGS/FI3) (LR-SEC/FI2) (FI-1) (RE .0175FI) (RE .0175FI)

96.5 .002 2.706 38.6 5.383E-05 7.708E-08 2.665E 06 9.100E-02 2.490E-02

LAPEKA HOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MMUACAK) TRAN(TO) REIA(TO)

TOP(T) 0.953 400 81 .0555 4.053E-01 5.4208E-01

SLUG(S) 0.937

PIC NO TIME DELT IPE H(IU) H(TO)/HREF M(.910) M(.912TO)/HREF M(.912TO)/HREF ST(TO)

1 4056(400) 25.70 24.34 6.048E-03 .1487 8.269E-03 .2017 7.917E-03 .1931 3.618E-03

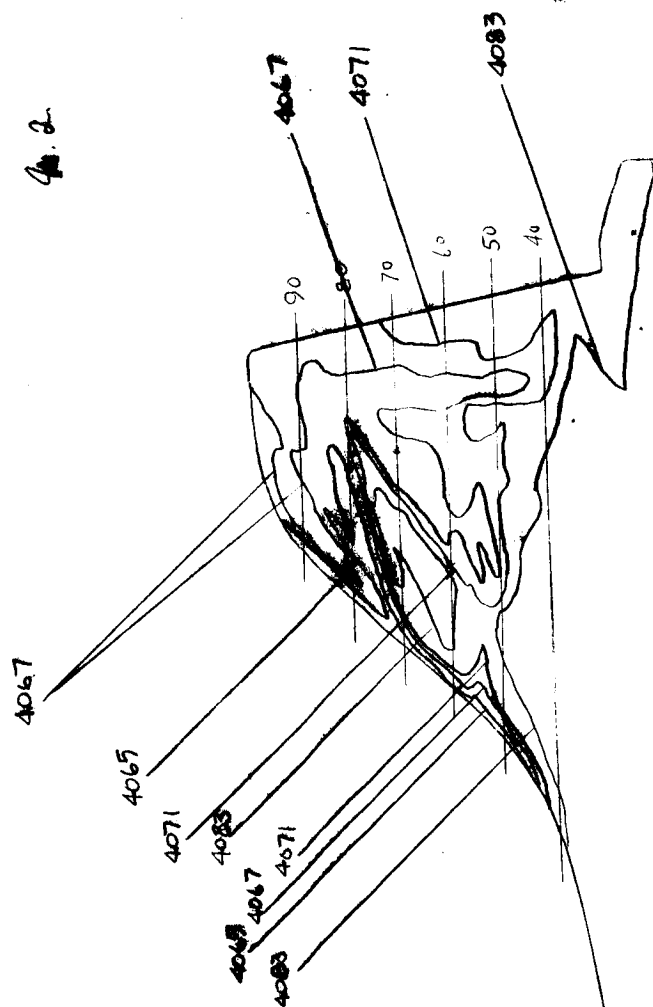
1 4057(400) 26.76 25.39 5.970E-03 .1456 8.096E-03 .1974 7.751E-03 .1890 3.540E-03

5 3809(400) 26.76 25.39 5.970E-03 .1456 8.096E-03 .1974 7.751E-03 .1890 3.540E-03

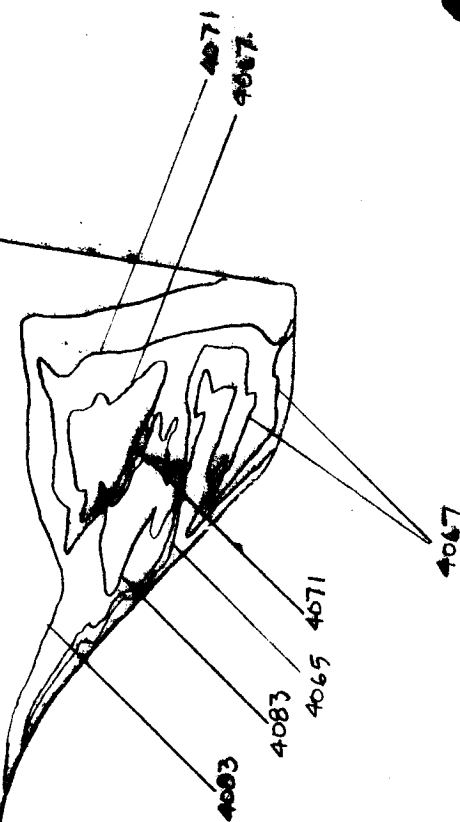
1 4028(400) 27.63 26.47 5.848E-03 .1426 7.930E-03 .1933 7.592E-03 .1851 3.467E-03

5 3810(400) 27.63 26.47 5.848E-03 .1426 7.930E-03 .1933 7.592E-03 .1851 3.467E-03

4.2



## NO NOSE MELT



6973

LIGHT OUT  
DEFINITION POOL

175



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9/26/73

AEUC(AKO, INC.) ANNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

NASA-HI STS ORMC

VA352

GROUP CONF IG MODEL MACH NO POI(PISA) IO(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREREND ROLL-MODEL YAW  
 33 2 UKEITEM S 7.99 598.3 1332 29.99 .01 -30.00 180.00 .00

1-INF P-INF U-INF V-INF HMI-INF MU-INF HE/FI MREF SREF  
 (UEG H) (PISA) (PISA) (PISA) (SLUGS/FEI3) (LD=SL/FEI2) (FI-1) (H= .0175FI) (H= .0175FI)  
 96.7 .062 2.761 3850 5.360E-05 7.787E-08 2.650E 06 4.098E-02 2.496E-02

CAMERA NULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MMUACAK) TBAK(TU) BETA(TU)  
 104(T) 0.53  
 SIDE(S) 0.537 79 .0555 4.051E-01 5.4179E-01

PIC N)	TIME	ULLTIME	M(TU)	M(TU)/MREF	M(-910)	M(-910)/MREF	M(-91210)	M(-91210)/MREF	SI(10)
1 4071(400)	12.86	11.50	8.800E-03	.2163	1.200E-02	.2829	1.170E-02	.2805	5.275E-03
1 4072(400)	13.52	12.55	8.487E-03	.2072	1.149E-02	.2805	1.100E-02	.2686	5.054E-03
3 3824(400)	13.52	12.55	8.487E-03	.2072	1.149E-02	.2805	1.100E-02	.2686	5.054E-03
1 4073(400)	13.52	13.53	8.139E-03	.1987	1.103E-02	.2690	1.050E-02	.2576	4.844E-03
3 3825(400)	13.59	13.63	8.143E-03	.1987	1.103E-02	.2690	1.050E-02	.2576	4.844E-03
3 3826(400)	13.64	14.04	7.844E-03	.1915	1.063E-02	.2592	1.018E-02	.2482	4.668E-03
1 4074(400)	16.07	14.71	7.841E-03	.1913	1.062E-02	.2590	1.017E-02	.2480	4.665E-03
1 4075(400)	17.12	15.76	7.575E-03	.1848	1.026E-02	.2502	9.822E-03	.2396	4.506E-03
3 3827(400)	17.12	15.76	7.575E-03	.1848	1.026E-02	.2502	9.822E-03	.2396	4.506E-03
1 4076(400)	18.40	19.83	7.329E-03	.1784	9.923E-03	.2421	9.503E-03	.2318	4.359E-03
3 3828(400)	18.40	19.83	7.329E-03	.1784	9.923E-03	.2421	9.503E-03	.2318	4.359E-03
3 3829(400)	19.25	17.84	7.110E-03	.1734	9.627E-03	.2348	9.213E-03	.2249	4.229E-03
1 4077(400)	19.27	17.91	7.105E-03	.1733	9.620E-03	.2347	9.213E-03	.2247	4.225E-03
3 3830(400)	20.22	18.96	6.906E-03	.1685	9.350E-03	.2281	8.954E-03	.2185	4.109E-03
1 4078(400)	20.25	18.99	6.901E-03	.1684	9.343E-03	.2280	8.948E-03	.2183	4.107E-03
1 4079(400)	21.40	20.04	6.718E-03	.1634	9.095E-03	.2218	8.710E-03	.2124	3.994E-03
3 3831(400)	21.40	20.04	6.718E-03	.1634	9.095E-03	.2218	8.710E-03	.2124	3.994E-03
1 4080(400)	22.44	21.11	6.544E-03	.1596	8.860E-03	.2161	8.485E-03	.2070	3.892E-03
3 3832(400)	22.44	21.11	6.544E-03	.1596	8.860E-03	.2161	8.485E-03	.2070	3.892E-03
3 3833(400)	23.23	22.16	6.387E-03	.1558	8.647E-03	.2109	8.281E-03	.2019	3.796E-03
1 4081(400)	23.25	22.19	6.383E-03	.1557	8.643E-03	.2104	8.277E-03	.2018	3.794E-03
3 3834(400)	23.25	22.19	6.383E-03	.1557	8.643E-03	.2104	8.277E-03	.2018	3.794E-03
1 4082(400)	24.23	23.24	6.237E-03	.1521	8.445E-03	.2059	8.087E-03	.1972	3.708E-03
3 3835(400)	24.23	23.24	6.237E-03	.1521	8.445E-03	.2059	8.087E-03	.1972	3.708E-03
1 4083(400)	25.28	24.32	6.098E-03	.1487	8.258E-03	.2013	7.906E-03	.1928	3.624E-03
3 3836(400)	25.28	24.32	6.098E-03	.1487	8.258E-03	.2013	7.906E-03	.1928	3.624E-03

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9/26/73

NASA-MI STS UNAC AEDUC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VAS32 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG MODEL MACH NO POISSONAL TO(DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND HOLL-MODEL YAW  
 33 2 00011EM S 7.99 599.1 1332 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF ME/FI MREF SIMEF  
 (DEG H) (PSIAL) (EL/SEC) (SLUGS/ET2) (EL-1) (RE .0175EL) (RE .0175EL)

96.7 .002 2.765 3850 5.367E-05 7.707E-08 2.854E 06 4.101E-02 2.494E-02

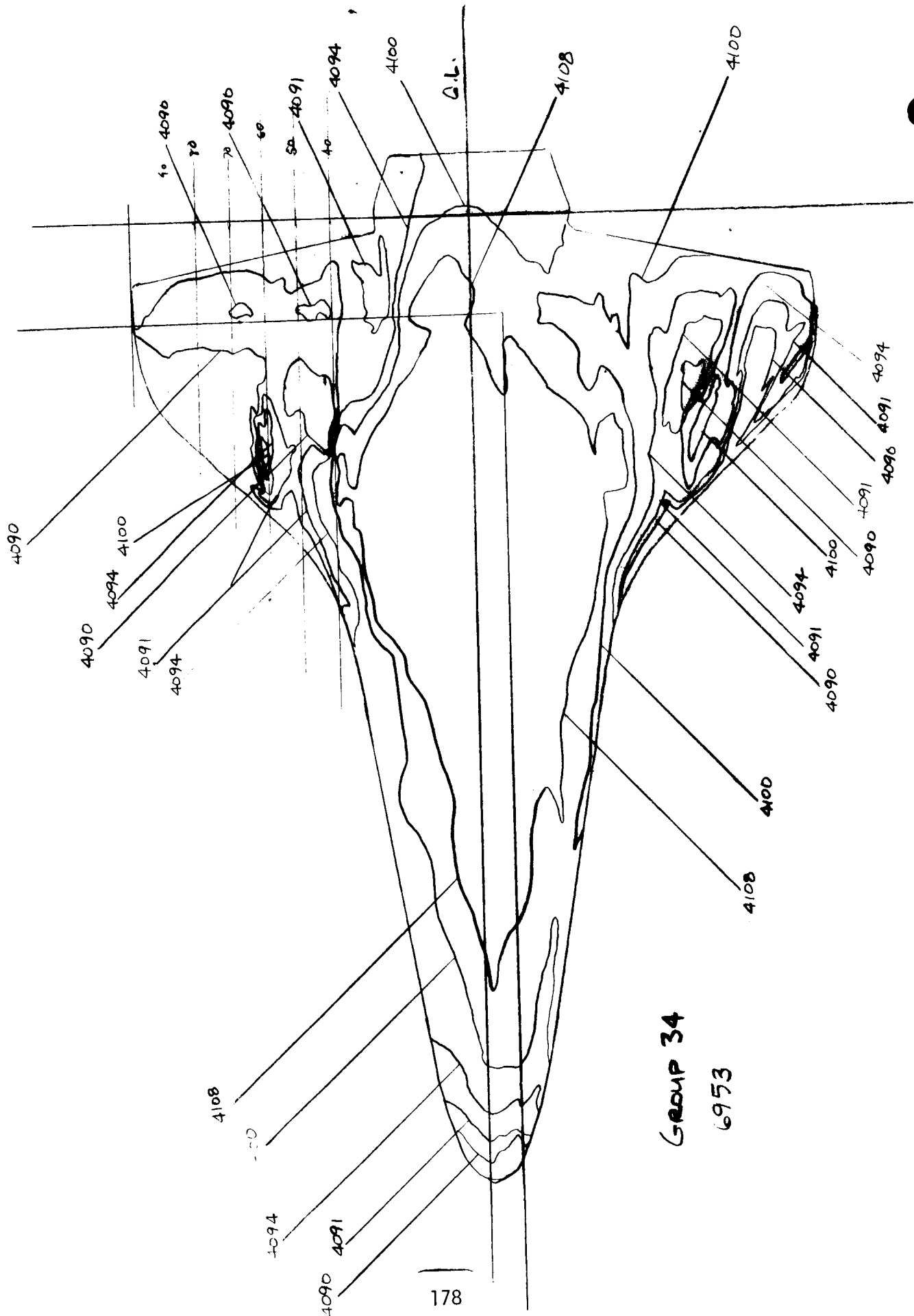
CAMERA MULL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/ACAK) TRAM(10) RE(A(10))

TOP(1) 0553 400 79 .0555 4.051E-01 5.4179E-01  
 SIDE(S) 0537

PIC NO TIME DELINE H(10) H(10)/MREF H(.910) M(.910)/MREF H(.91210)/MREF S(110)  
 1 4084(400) 26.76 25.39 5.907E-03 .1455 8.079E-03 .1971 7.737E-03 .1887 3.548E-03  
 2 3836(400) 26.76 25.39 5.907E-03 .1455 8.079E-03 .1971 7.737E-03 .1887 3.548E-03  
 3 3837(400) 26.76 25.39 5.907E-03 .1455 8.079E-03 .1971 7.737E-03 .1887 3.548E-03  
 4 4085(400) 27.53 26.44 5.847E-03 .1426 7.917E-03 .1930 7.582E-03 .1848 3.474E-03  
 5 4086(400) 27.53 26.47 5.845E-03 .1425 7.913E-03 .1929 7.578E-03 .1847 3.472E-03  
 6 3838(400) 28.08 27.52 5.742E-03 .1398 7.760E-03 .1892 7.632E-03 .1812 3.405E-03  
 7 4086(400) 28.51 27.55 5.729E-03 .1397 7.757E-03 .1891 7.628E-03 .1811 3.404E-03

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7/26/73

NASA-HI SIS UHAC

VA352

AEDC (ARL/JAL) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH PIPESONIC TUNNEL H

GROUP CONFIG MACH NO PO (PSIA) 10 (DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PRE-REFD ROLL-MODEL YAW  
 34 4 CHEILIN M6 1.99 597.7 1331 29.94 .01 -30.00 180.00 .00

1-IMP P-IMP V-IMP RMD-IMP RMD-IMP HE/FI HREF SINEF  
 (DEG H) (PSIA) (E1/2EC) (SLUGS/E13) (LBS-SEL/E12) (E1-1) (K= .0175E1) (K= .01/SE1)  
 96.6 .002 2.758 38.4 5.358E-05 1.780E-08 2.651E 06 4.095E-02 2.496E-02

CAPCHA HULL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/SEC) TRAK(TU) BETA(TU)  
 104(1) 0.537 300 83 .0544 0 0  
 SILE(5) 0.537

PIC NO TIME DELINE H(10) HREF H(.910) HL.9101/HREF HL.91210/HREF HL.91210/HREF S1101

1 4047(300) .05 MODEL HAS NOT REACHED CENTERLINE  
 2 3834(300) .05 MODEL HAS NOT REACHED CENTERLINE  
 3 4046(300) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 4 3843(300) 2.10 MODEL HAS NOT REACHED CENTERLINE  
 5 3441(300) 2.15 MODEL HAS NOT REACHED CENTERLINE  
 6 4049(300) 2.18 MODEL HAS NOT REACHED CENTERLINE

INLET F14E = 2.45	1.259E-02	.3075	1.610E-02	.3945	1.501E-02	.3811	7.538E-03
1 4047(300) 3.43 1.05	1.259E-02	.3075	1.610E-02	.3945	1.501E-02	.3811	7.538E-03
2 3842(300) 3.43 1.05	1.259E-02	.3075	1.610E-02	.3945	1.501E-02	.3811	7.538E-03
3 4041(300) 4.20 2.91	1.002E-02	.2445	1.285E-02	.3136	1.241E-02	.3030	5.993E-03
4 3843(300) 4.20 2.91	1.002E-02	.2445	1.285E-02	.3136	1.241E-02	.3030	5.993E-03
5 3444(300) 5.26 3.92	4.541E-03	.2047	1.102E-02	.2690	1.003E-02	.2599	5.140E-03
6 4042(300) 5.26 3.92	4.541E-03	.2047	1.102E-02	.2690	1.003E-02	.2599	5.140E-03
1 3845(300) 6.43 5.05	7.622E-03	.1861	9.770E-03	.2387	7.443E-03	.2300	4.561E-03
2 4043(300) 6.43 5.05	7.622E-03	.1861	9.770E-03	.2387	7.443E-03	.2300	4.561E-03
3 4044(300) 7.21 6.13	8.421E-03	.1690	8.870E-03	.2168	8.576E-03	.2094	4.142E-03
4 3846(300) 7.21 6.13	8.421E-03	.1690	8.870E-03	.2168	8.576E-03	.2094	4.142E-03
5 4045(300) 8.26 7.14	6.394E-03	.1561	8.203E-03	.2002	7.924E-03	.1934	3.828E-03
6 3847(300) 8.26 7.14	6.394E-03	.1561	8.203E-03	.2002	7.924E-03	.1934	3.828E-03
1 3848(300) 9.24 8.26	5.903E-03	.1456	7.650E-03	.1868	7.390E-03	.1805	3.570E-03
2 4046(300) 9.24 8.26	5.903E-03	.1456	7.650E-03	.1868	7.390E-03	.1805	3.570E-03
3 3849(300) 10.71 9.34	5.649E-03	.1369	7.193E-03	.1757	6.951E-03	.1697	3.356E-03
4 4047(300) 10.71 9.34	5.649E-03	.1369	7.193E-03	.1757	6.951E-03	.1697	3.356E-03
5 4048(300) 11.79 10.41	5.411E-03	.1296	6.813E-03	.1663	6.582E-03	.1606	3.177E-03
6 3850(300) 11.79 10.41	5.411E-03	.1296	6.813E-03	.1663	6.582E-03	.1606	3.177E-03
1 4049(300) 12.86 11.49	5.056E-03	.1234	6.486E-03	.1583	6.266E-03	.1530	3.025E-03
2 3851(300) 12.86 11.49	5.056E-03	.1234	6.486E-03	.1583	6.266E-03	.1530	3.025E-03

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9/26/73

NASA-MI STS CH4C

AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE  
 YONAHMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MAJOR NO P0 (PSIA) I0 (DEG F) ALPHA-MODEL ALPHA-SECTION ALPHA-PR-BEND MOLL-MODEL YAW  
 34 9 00000000 7.99 558.0 1330 29.99 .01 -30.00 180.00 .00

T-INT P-INT Q-INT V-INT MU-INT MU-INT HREF HREF SREF  
 (DEG F) (PSIA) (F/SEC) (SLUGS/FT3) (LBS/FT2) (F/L) (H= .0175 F) (H= .0175 F)

98.6 .002 2.760 3848 5.362E-05 7.77E-02 2.653E-06 4.006E-02 2.495E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMUACAK) TRANSITIO BETA (10)

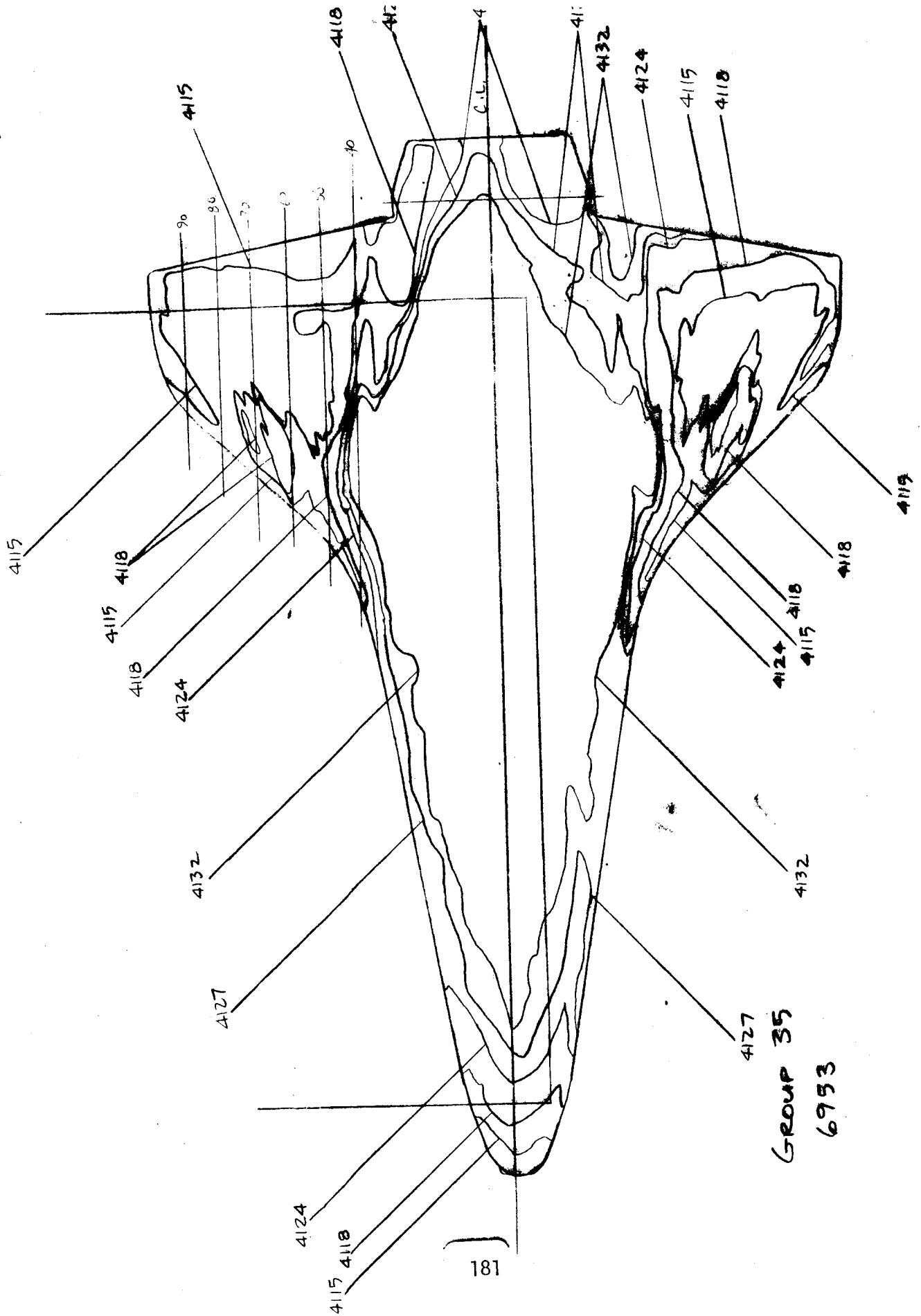
10P (T) 653  
 SILE (S) 6537 300 83 .0544 2.756E-01 3.1503E-01

PIC NO	TIME	UCLTIME	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)
3	3852(300)	13.52	4.840E-03	.1161	6.208E-03	.1515	5.997E-03	.1464	2.844E-03
1	4106(300)	13.54	4.835E-03	.1180	6.202E-03	.1513	5.991E-03	.1462	2.850E-03
3	3853(300)	13.59	4.844E-03	.1133	5.958E-03	.1454	5.755E-03	.1405	2.777E-03
1	4101(300)	13.62	4.840E-03	.1132	5.952E-03	.1453	5.750E-03	.1403	2.775E-03
3	3854(300)	13.67	4.847E-03	.1091	5.736E-03	.1400	5.541E-03	.1352	2.673E-03
1	4102(300)	13.69	4.847E-03	.1090	5.731E-03	.1399	5.536E-03	.1351	2.671E-03
3	4103(300)	13.77	4.836E-03	.1053	5.536E-03	.1351	5.348E-03	.1305	2.580E-03
1	3855(300)	13.77	4.836E-03	.1053	5.536E-03	.1351	5.348E-03	.1305	2.580E-03
3	4104(300)	13.82	4.817E-03	.1019	5.357E-03	.1307	5.175E-03	.1263	2.497E-03
1	3856(300)	13.84	4.817E-03	.1019	5.357E-03	.1307	5.175E-03	.1263	2.497E-03
3	3857(300)	13.87	4.805E-03	.0989	5.197E-03	.1268	5.020E-03	.1225	2.422E-03
1	4105(300)	13.90	4.805E-03	.0988	5.193E-03	.1267	5.017E-03	.1224	2.420E-03
3	3858(300)	13.97	3.935E-03	.0980	5.047E-03	.1232	4.876E-03	.1190	2.353E-03
1	4106(300)	14.00	3.935E-03	.0980	5.047E-03	.1231	4.873E-03	.1189	2.351E-03
3	4107(300)	14.02	3.828E-03	.0934	4.910E-03	.1198	4.743E-03	.1157	2.288E-03
1	3859(300)	14.05	3.828E-03	.0934	4.910E-03	.1198	4.743E-03	.1157	2.288E-03
3	4108(300)	14.10	3.731E-03	.0910	4.786E-03	.1168	4.623E-03	.1128	2.230E-03
1	3860(300)	14.12	3.729E-03	.0910	4.783E-03	.1167	4.621E-03	.1127	2.229E-03
3	3861(300)	14.18	3.639E-03	.0888	4.688E-03	.1139	4.510E-03	.1100	2.175E-03
1	4109(300)	14.20	3.637E-03	.0887	4.686E-03	.1138	4.507E-03	.1100	2.174E-03
MODEL HAS LEFT CENTERLINE									
3	3862(300)	14.23	3.554E-03	.0867	4.559E-03	.1113	4.408E-03	.1075	2.125E-03
1	4110(300)	14.25	3.552E-03	.0867	4.557E-03	.1112	4.402E-03	.1074	2.124E-03

GAO. 35

6953

Ch. 2.



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 9/26/73

NASA-RI STS 044C  
 VA352

AEDC(ARO-INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
35	4	OREITER R1	7.99	598.4	1329	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	S/REF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175F1)	(R= .0175F1)		
96.6	.062	2.762	3847	5.370E-05	7.773E-08	2.658E 06	4.097E-02	2.493E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAK)	TBAR(TO)	BETA(TO)				
LOP(T)	6953									
SILE(S)	6937	300	83	.0544	0	0				

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
3863(300)	3.20	1.84	.3090	1.625E-02	.3966	1.570E-02	.3831	7.567E-03
4111(300)	3.23	1.87	.3059	1.614E-02	.3939	1.559E-02	.3805	7.515E-03
3864(300)	4.28	2.92	.2455	1.291E-02	.3151	1.247E-02	.3043	6.011E-03
4112(300)	4.28	2.92	.2455	1.291E-02	.3151	1.247E-02	.3043	6.011E-03
3868(300)	5.33	3.97	.2104	1.107E-02	.2701	1.069E-02	.2609	5.152E-03
4116(300)	5.36	3.99	.2098	1.103E-02	.2692	1.066E-02	.2601	5.137E-03
3869(300)	6.41	5.04	.1866	9.817E-03	.2395	9.883E-03	.2314	4.569E-03
4117(300)	6.43	5.07	.1862	9.793E-03	.2390	9.860E-03	.2308	4.559E-03
4118(300)	7.48	6.12	.1695	8.913E-03	.2175	8.609E-03	.2101	4.149E-03
3870(300)	7.48	6.12	.1695	8.913E-03	.2175	8.609E-03	.2101	4.149E-03
4119(300)	8.56	7.20	.1562	8.219E-03	.2005	7.939E-03	.1937	3.824E-03
3871(300)	8.56	7.20	.1562	8.219E-03	.2005	7.939E-03	.1937	3.824E-03
4120(300)	9.64	8.27	.1458	7.666E-03	.1871	7.405E-03	.1807	3.570E-03
3872(300)	9.64	8.27	.1458	7.666E-03	.1871	7.405E-03	.1807	3.570E-03
4121(300)	10.69	9.32	.1373	7.221E-03	.1762	6.975E-03	.1702	3.361E-03
3873(300)	10.71	9.35	.1371	7.211E-03	.1760	6.966E-03	.1700	3.357E-03
4122(300)	11.76	10.40	.1300	6.837E-03	.1668	6.504E-03	.1611	3.181E-03
3874(300)	11.79	10.43	.1298	6.829E-03	.1666	6.507E-03	.1609	3.177E-03
4123(300)	12.84	11.48	.1237	6.509E-03	.1588	6.287E-03	.1534	3.028E-03
3875(300)	12.84	11.48	.1237	6.509E-03	.1588	6.287E-03	.1534	3.028E-03

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NASA-RI STS OHAC  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(EG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
35	4	URBITEM R1	7.99	599.1	1329	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MREF	SIREF		
(DEG H)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R= .0175F1)	(R= .0175FT)		
96.6	.062	2.765	3847	5.378E-05	7.774E-08	2.660E 06	4.100E-02	2.492E-02		
CAMERA	MULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHO/CXK)	TRAR(TO)	BEIA(TO)				
TOP(T)	6553									
SIDE(S)	6937	300	83	.0544	2.761E-01	3.1583E-01				

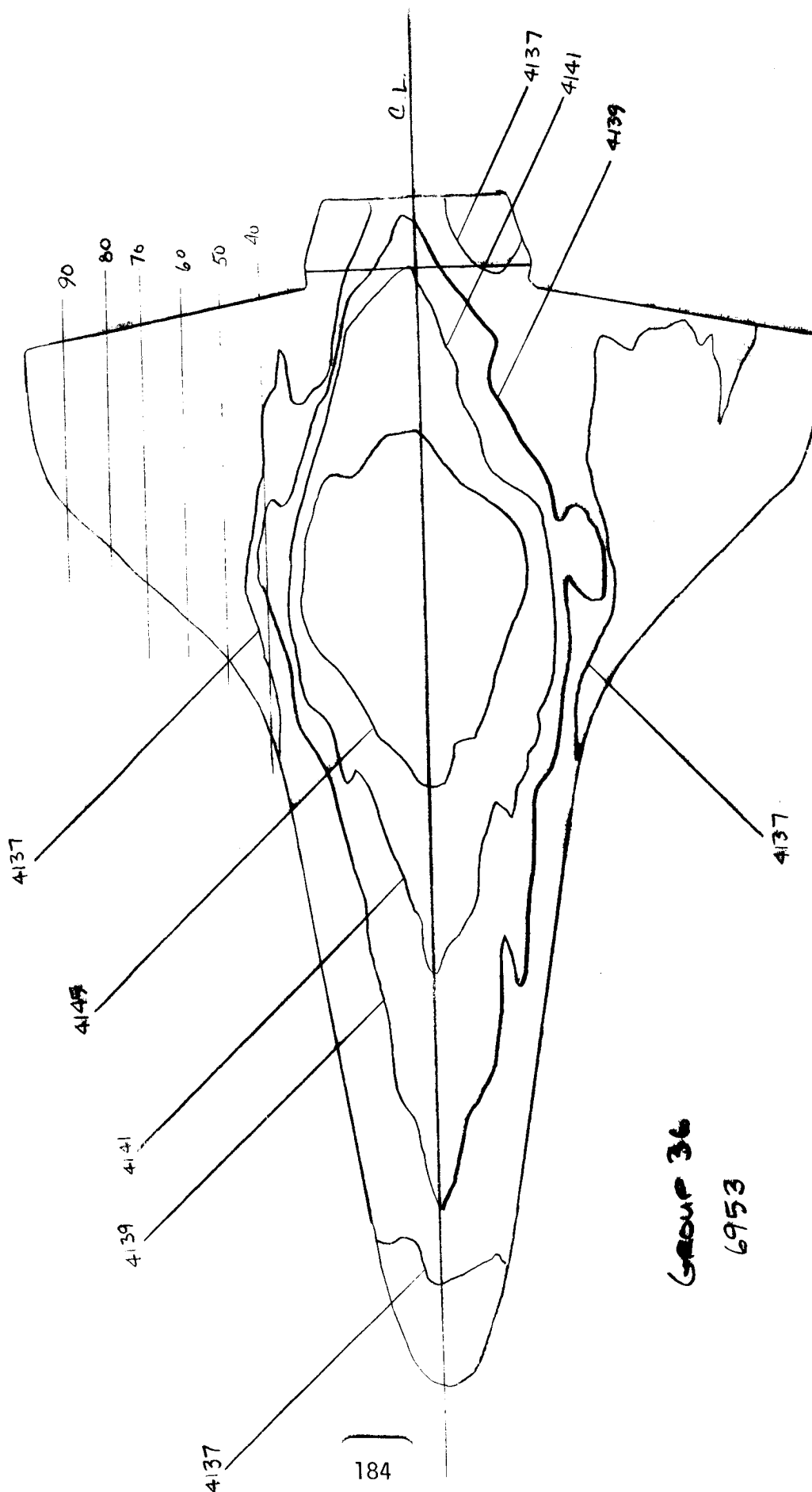
PIC NO	TIME DELTIME	H(10)	M(TO)/HREF	H(-910)	M(.910)/HREF	M(.912TO)	H(.912TO)/HREF	ST(TO)
S 3876(300)	13.89	4.854E-03	.1184	6.230E-03	.1520	6.018E-03	.1468	2.898E-03
I 4124(300)	13.92	4.849E-03	.1183	6.223E-03	.1518	6.012E-03	.1466	2.895E-03
S 3877(300)	14.47	4.658E-03	.1136	5.978E-03	.1458	5.775E-03	.1409	2.781E-03
I 4125(300)	14.99	4.654E-03	.1135	5.973E-03	.1457	5.769E-03	.1407	2.779E-03
T 4126(300)	16.04	4.484E-03	.1094	5.755E-03	.1404	5.559E-03	.1356	2.676E-03
S 3878(300)	16.04	4.484E-03	.1094	5.755E-03	.1404	5.559E-03	.1356	2.676E-03
I 4127(300)	17.12	4.328E-03	.1056	5.555E-03	.1355	5.366E-03	.1309	2.583E-03
S 3879(300)	17.12	4.328E-03	.1056	5.555E-03	.1355	5.366E-03	.1309	2.583E-03
I 4128(300)	18.20	4.188E-03	.1021	5.374E-03	.1311	5.191E-03	.1266	2.500E-03
S 3880(300)	18.20	4.188E-03	.1021	5.374E-03	.1311	5.191E-03	.1266	2.500E-03
I 4129(300)	19.25	4.063E-03	.0991	5.214E-03	.1271	5.037E-03	.1228	2.422E-03
S 3882(300)	19.27	4.060E-03	.0990	5.210E-03	.1271	5.033E-03	.1227	2.422E-03
I 4130(300)	20.32	3.948E-03	.0962	5.064E-03	.1234	4.891E-03	.1193	2.354E-03
S 4131(300)	20.35	3.943E-03	.0962	5.060E-03	.1234	4.888E-03	.1192	2.353E-03
I 4132(300)	21.40	3.838E-03	.0936	4.926E-03	.1201	4.758E-03	.1160	2.290E-03
S 3883(300)	21.40	3.838E-03	.0936	4.926E-03	.1201	4.758E-03	.1160	2.290E-03
I 4133(300)	22.48	3.739E-03	.0912	4.799E-03	.1170	4.635E-03	.1130	2.231E-03
S 3884(300)	22.48	3.739E-03	.0912	4.799E-03	.1170	4.635E-03	.1130	2.231E-03
MODEL HAS LEFT CENTERLINE								
S 3885(300)	23.38	3.649E-03	.0890	4.684E-03	.1142	4.524E-03	.1103	2.177E-03
I 4133(300)	23.53	3.647E-03	.0889	4.681E-03	.1142	4.522E-03	.1103	2.177E-03



Group 36

6953

Ch. 2.



Group 36

6953

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 4/26/73

MASA-HI STS CH4C  
 AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO P0(PSIA) I0(UEG M) ALPHA-MODEL ALPHA-SECUM ALPHA-PRENUM ROLL-MODEL YAW  
 36 2 CHELICK S 7.99 549.6 1329 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF W-INF MU-INF ME/FI MREF SREF  
 (UEG M) (PSIA) (FI/SEC) (SLUGS/FI3) (LBS-SEC/FI2) (FI-1) (IN= .0175E-1) (IN= .0175E-1)  
 96.6 .002 2.707 38.7 5.380E-05 7.77E-08 2.662E 06 4.101E-02 2.491E-02

CAMERA MULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MMUACAR) TRAN(TO) BEIA(TO)  
 10P(1) 653  
 510E(5) 6537 200 82 .0519 0 0

PIC NO TIME DELINE H(TO) H(TO)/MREF H(.910) M(.910)/MREF H(.91210) H(.91210)/MREF ST(10)

1 4134(200) .03 MODEL HAS NOT REACHED CENTERLINE  
 5 3856(200) .035 MODEL HAS NOT REACHED CENTERLINE  
 5 3887(200) 1.08 MODEL HAS NOT REACHED CENTERLINE  
 1 4135(200) 1.10 MODEL HAS NOT REACHED CENTERLINE  
 1 4136(200) 2.15 MODEL HAS NOT REACHED CENTERLINE  
 5 3888(200) 2.15 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.43

5	3889(200)	3.00	1.84	5.773E-03	.1407	7.148E-03	.1742	8.944E-04	.1693	3.460E-03
1	4137(200)	3.23	1.87	5.734E-03	.1398	7.100E-03	.1731	6.898E-03	.1681	3.437E-03
5	3890(200)	4.28	2.92	4.238E-03	.1114	5.678E-03	.1345	5.516E-03	.1345	2.752E-03
1	4138(200)	4.50	2.94	4.507E-03	.1114	5.654E-03	.1379	5.493E-03	.1340	2.740E-03
1	4139(200)	5.26	3.99	3.920E-03	.0956	4.853E-03	.1183	4.715E-03	.1149	2.351E-03
5	3891(200)	5.26	3.99	4.920E-03	.0956	4.853E-03	.1143	4.715E-03	.1149	2.351E-03
1	4140(200)	6.43	5.07	3.449E-03	.0848	4.307E-03	.1050	4.184E-03	.1020	2.086E-03
5	3892(200)	6.43	5.07	3.449E-03	.0848	4.307E-03	.1050	4.184E-03	.1020	2.086E-03
1	4141(200)	7.44	6.12	3.106E-03	.0771	3.920E-03	.0953	3.800E-03	.0928	1.897E-03
5	3893(200)	7.51	6.15	3.100E-03	.0770	3.912E-03	.0953	3.800E-03	.0926	1.893E-03
5	3894(200)	8.56	7.20	2.920E-03	.0712	3.615E-03	.0881	3.512E-03	.0856	1.750E-03
1	4142(200)	8.56	7.22	2.915E-03	.0711	3.609E-03	.0880	3.506E-03	.0855	1.748E-03
1	4143(200)	9.54	8.27	2.723E-03	.0664	3.372E-03	.0822	3.274E-03	.0798	1.631E-03
5	3895(200)	9.54	8.27	2.723E-03	.0664	3.372E-03	.0822	3.274E-03	.0798	1.631E-03
1	4144(200)	10.71	9.35	2.502E-03	.0624	3.172E-03	.0773	3.081E-03	.0751	1.534E-03
5	3896(200)	10.71	9.35	2.502E-03	.0624	3.172E-03	.0773	3.081E-03	.0751	1.534E-03
5	3897(200)	11.76	10.40	2.429E-03	.0592	3.007E-03	.0733	2.921E-03	.0712	1.455E-03
1	4145(200)	11.79	10.43	2.426E-03	.0591	3.003E-03	.0732	2.918E-03	.0711	1.453E-03
5	3898(200)	12.54	11.48	2.312E-03	.0563	2.863E-03	.0698	2.781E-03	.0678	1.385E-03

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9/26/73

NASA-HI STS OMHC

AEDC (ARO, IAC) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO PO (PSIA) T (DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 36 2 0HE11EM S 7.99 600.4 1330 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF RHO-INF MU-INF HE/FI HREF SREF  
 (DEG H) (PSIA) (FI/SEC) (SLUGS/FI3) (LB-SEC/FI2) (FI-L) (H= .0175FI) (H= .0175FI)  
 96.6 .062 2.771 3847 5.387E-05 7.775E-08 2.666E 06 4.104E-02 2.489E-02

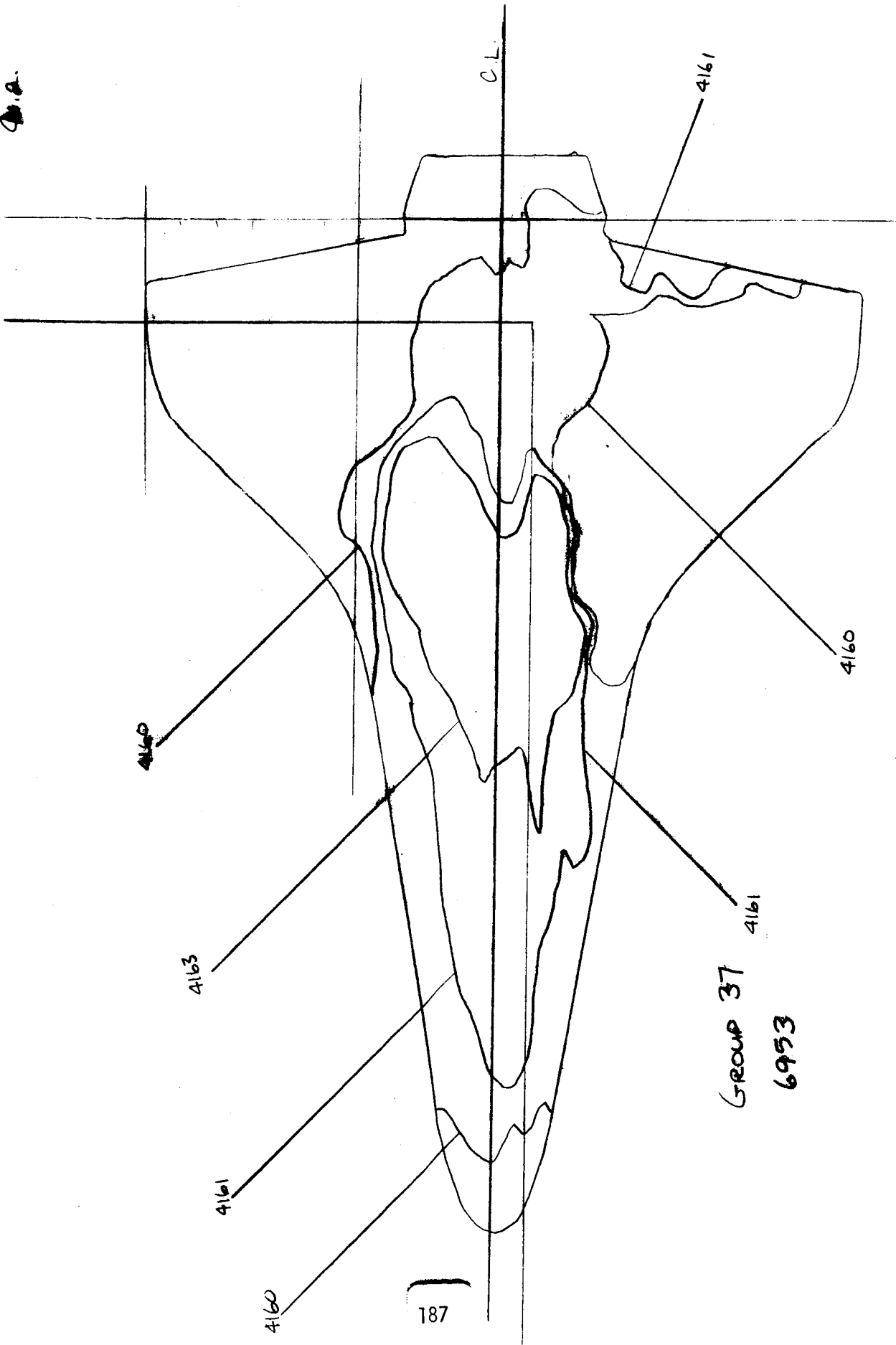
CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMUACAK) TBAK(TO) BETA(TO)

10K(T) 0953  
 SIDE(S) 0937 200 H2 .0519 1.499E-01 1.5092E-01

PIC NO	TIME DELTIME	H(TO)	HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)
1 4146(200)	12.86	2.310E-03	.0563	2.459E-03	.0637	2.778E-03	.0677	1.383E-03
2 3294(200)	13.52	2.211E-03	.0539	2.737E-03	.0667	2.659E-03	.0648	1.324E-03
1 4147(200)	13.54	2.209E-03	.0534	2.734E-03	.0666	2.657E-03	.0647	1.323E-03
1 4145(200)	13.59	2.122E-03	.0517	2.627E-03	.0630	2.552E-03	.0622	1.272E-03
2 3900(200)	14.29	2.122E-03	.0517	2.627E-03	.0630	2.552E-03	.0622	1.272E-03
1 4149(200)	15.67	2.043E-03	.0498	2.529E-03	.0616	2.457E-03	.0599	1.223E-03
2 3901(200)	16.07	2.043E-03	.0498	2.529E-03	.0616	2.457E-03	.0599	1.223E-03
2 3902(200)	17.12	1.973E-03	.0481	2.443E-03	.0595	2.372E-03	.0578	1.182E-03
1 4150(200)	17.14	1.973E-03	.0481	2.443E-03	.0595	2.372E-03	.0578	1.182E-03
2 3903(200)	18.20	1.899E-03	.0465	2.365E-03	.0576	2.298E-03	.0559	1.143E-03
1 4151(200)	18.22	1.899E-03	.0465	2.365E-03	.0576	2.298E-03	.0559	1.142E-03
1 4152(200)	19.27	1.851E-03	.0451	2.292E-03	.0558	2.226E-03	.0542	1.108E-03
2 3904(200)	19.27	1.851E-03	.0451	2.292E-03	.0558	2.226E-03	.0542	1.108E-03
1 4153(200)	20.25	1.798E-03	.0438	2.225E-03	.0542	2.162E-03	.0527	1.076E-03
2 3905(200)	20.25	1.798E-03	.0438	2.225E-03	.0542	2.162E-03	.0527	1.076E-03
2 3906(200)	21.40	1.720E-03	.0426	2.160E-03	.0528	2.109E-03	.0513	1.048E-03
1 4154(200)	21.42	1.749E-03	.0426	2.163E-03	.0527	2.103E-03	.0512	1.047E-03
2 3907(200)	22.48	1.705E-03	.0415	2.111E-03	.0514	2.050E-03	.0499	1.021E-03
1 4155(200)	22.50	1.704E-03	.0415	2.109E-03	.0514	2.049E-03	.0499	1.020E-03
1 4156(200)	23.25	1.663E-03	.0405	2.059E-03	.0501	2.000E-03	.0487	9.950E-04
2 3908(200)	23.25	1.663E-03	.0405	2.059E-03	.0501	2.000E-03	.0487	9.950E-04
2 3908(200)	24.58							

MODEL HAS LEFT CENTERLINE

GROUP 37  
6953  
D.A.



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9/26/73

WASA-HI SIS ORAC  
 VA352  
 AECU(ARU, INC.) ARNOLD AFS, TENNESSEE  
 YUN KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG MODEL MACH NO P0(P5IA) 10(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 37 4 CHELLIN H6 7.99 597.0 1330 29.99 .01 -30.00 180.00 .00

1-INF P-INF Q-INF R0-INF MU-INF ME/FI HREF SREF  
 (UEG H) (P5IA) (FI/SEC) (SLUGS/FI3) (H-SEC/FI2) (FI-1) (ME .0175FI) (ME .0175FI)  
 96.6 .002 2.755 3847 5.356E-05 7.775E-08 2.650E 06 4.092E-02 2.497E-02

CARPHA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHU/CAK) TBAH(TO) BETA(TO)

10P(T) 6953  
 SILE(S) 200 86 .0519 0 0

PIC NO TIME DELTME H(10) H(10)/HREF H(.910) H(.910)/HREF H(.91210) H(.91210)/HREF SI(10)

3 3909(200) .03  
 1 4157(200) .05  
 5 3913(200) 1.04  
 1 4158(200) 1.10  
 1 4157(200) 2.15  
 5 3911(200) 2.15

INJECT TIME = 2.45

3	3912(200)	3.20	1.83	5.64E-03	.1309	6.942E-03	.1690	6.742E-03	.1647	3.373E-03
1	4159(200)	3.23	1.85	5.500E-03	.1359	6.895E-03	.1684	6.697E-03	.1635	3.349E-03
5	3913(200)	3.28	2.90	4.946E-03	.1085	5.507E-03	.1345	5.348E-03	.1306	2.674E-03
1	4101(200)	4.20	2.93	4.427E-03	.1081	5.483E-03	.1339	5.326E-03	.1300	2.663E-03
1	4102(200)	5.26	3.98	3.797E-03	.0927	4.704E-03	.1149	4.508E-03	.1116	2.285E-03
5	3914(200)	5.36	3.98	3.797E-03	.0927	4.704E-03	.1149	4.508E-03	.1116	2.285E-03
1	4103(200)	6.43	5.06	3.309E-03	.0823	4.173E-03	.1019	4.033E-03	.0990	2.027E-03
5	3915(200)	6.43	5.06	3.309E-03	.0823	4.173E-03	.1019	4.033E-03	.0990	2.027E-03
1	4104(200)	7.48	6.11	3.035E-03	.0749	3.737E-03	.0928	3.688E-03	.0901	1.856E-03
5	3916(200)	7.51	6.13	3.035E-03	.0747	3.737E-03	.0926	3.688E-03	.0899	1.842E-03
1	4105(200)	8.56	7.18	2.626E-03	.0690	3.501E-03	.0855	3.400E-03	.0830	1.700E-03
5	3917(200)	8.58	7.21	2.621E-03	.0689	3.495E-03	.0853	3.394E-03	.0829	1.697E-03
1	4106(200)	9.64	8.26	2.636E-03	.0644	3.265E-03	.0797	3.171E-03	.0774	1.585E-03
5	3918(200)	9.64	8.26	2.636E-03	.0644	3.265E-03	.0797	3.171E-03	.0774	1.585E-03
1	4107(200)	10.71	9.34	2.479E-03	.0605	3.071E-03	.0750	2.983E-03	.0728	1.491E-03
5	3919(200)	10.71	9.34	2.479E-03	.0605	3.071E-03	.0750	2.983E-03	.0728	1.491E-03
1	4108(200)	11.79	10.41	2.347E-03	.0573	2.908E-03	.0710	2.844E-03	.0690	1.412E-03
5	3920(200)	11.79	10.41	2.347E-03	.0573	2.908E-03	.0710	2.844E-03	.0690	1.412E-03
1	4109(200)	12.84	11.46	2.237E-03	.0546	2.771E-03	.0677	2.692E-03	.0657	1.345E-03

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9/26/73

NASA-HI SYS OH4C

AEDC(AH-10-1) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFID MODEL MACH NO PO(PSTA) TO(UEU H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND MOLL-MODEL YAW  
 37 9 UNREITER M6 7.99 55R-0 1330 29.99 .01 -30.00 180.00 .00  
 I-INF P-INF U-INF V-INF MU-INF MU-INF RE/FI MHEF SIMEF  
 (UEU H) (PSTA) (FI/SEC) (SLUGS/FT) (LBS/SEC/FT) (FI-1) (LBS/FT/SEC) (LBS/FT/SEC)  
 94.6 .002 2.750 38.7 5.365E-05 7.775E-08 2.655E-06 4.090E-02 2.494E-02  
 CAMERA MOLL NO PAINT TEMP (UEU F) INITIAL TEMP (UEU F) SQUARE ROOT (RHUACA) TBAR(TU) REJA(TO)  
 10H(T) 653  
 SILE(S) 6537 200 86 .0519 1.455E-01 1.4594E-01

PIC NO	TIME DELT	M(TU)	M(TU)/MHEF	M(.910)	M(.910)/MHEF	M(.91210)	M(.91210)/MHEF	ST(TU)
1 319(200)	12.56	2.635E-03	.0546	2.768E-03	.0676	2.689E-03	.0656	1.344E-03
2 322(200)	13.52	2.139E-03	.0522	2.650E-03	.0647	2.573E-03	.0629	1.287E-03
3 417(200)	13.54	2.137E-03	.0522	2.647E-03	.0647	2.571E-03	.0628	1.286E-03
4 411(200)	13.52	2.033E-03	.0501	2.543E-03	.0621	2.470E-03	.0603	1.235E-03
5 3923(200)	13.62	2.053E-03	.0501	2.543E-03	.0621	2.470E-03	.0603	1.235E-03
6 417(200)	13.67	1.970E-03	.0482	2.448E-03	.0598	2.377E-03	.0580	1.188E-03
7 3924(200)	13.67	1.970E-03	.0482	2.448E-03	.0598	2.377E-03	.0580	1.188E-03
8 3525(200)	17.12	1.909E-03	.0466	2.365E-03	.0577	2.297E-03	.0561	1.148E-03
9 4173(200)	17.14	1.907E-03	.0466	2.363E-03	.0577	2.295E-03	.0560	1.147E-03
10 3926(200)	18.20	1.837E-03	.0451	2.288E-03	.0559	2.222E-03	.0542	1.111E-03
11 4174(200)	18.22	1.840E-03	.0451	2.288E-03	.0559	2.220E-03	.0542	1.110E-03
12 3927(200)	18.27	1.791E-03	.0437	2.218E-03	.0541	2.154E-03	.0526	1.077E-03
13 4175(200)	18.20	1.799E-03	.0437	2.218E-03	.0541	2.153E-03	.0526	1.076E-03
14 4176(200)	20.25	1.739E-03	.0424	2.154E-03	.0526	2.092E-03	.0511	1.046E-03
15 3928(200)	20.25	1.739E-03	.0424	2.154E-03	.0526	2.092E-03	.0511	1.046E-03
16 3929(200)	21.30	1.633E-03	.0413	2.077E-03	.0512	2.037E-03	.0497	1.018E-03
17 4177(200)	21.32	1.642E-03	.0413	2.076E-03	.0512	2.035E-03	.0497	1.017E-03
18 3930(200)	22.08	1.649E-03	.0403	2.043E-03	.0499	1.984E-03	.0484	9.917E-04
19 4178(200)	22.10	1.649E-03	.0403	2.043E-03	.0499	1.984E-03	.0484	9.913E-04
20 3931(200)	22.12	1.648E-03	.0402	2.042E-03	.0498	1.983E-03	.0484	9.913E-04
21 4179(200)	22.12	1.648E-03	.0402	2.042E-03	.0498	1.983E-03	.0484	9.913E-04
22 3932(200)	23.25	1.571E-03	.0383	1.946E-03	.0475	1.890E-03	.0461	9.444E-04
23 4180(200)	23.25	1.571E-03	.0383	1.946E-03	.0475	1.890E-03	.0461	9.444E-04
24 3932(200)	24.33	1.530E-03	.0375	1.902E-03	.0464	1.848E-03	.0451	9.235E-04
25 4181(200)	24.33	1.530E-03	.0375	1.902E-03	.0464	1.848E-03	.0451	9.235E-04
26 3933(200)	25.70	1.530E-03	.0375	1.902E-03	.0464	1.848E-03	.0451	9.235E-04

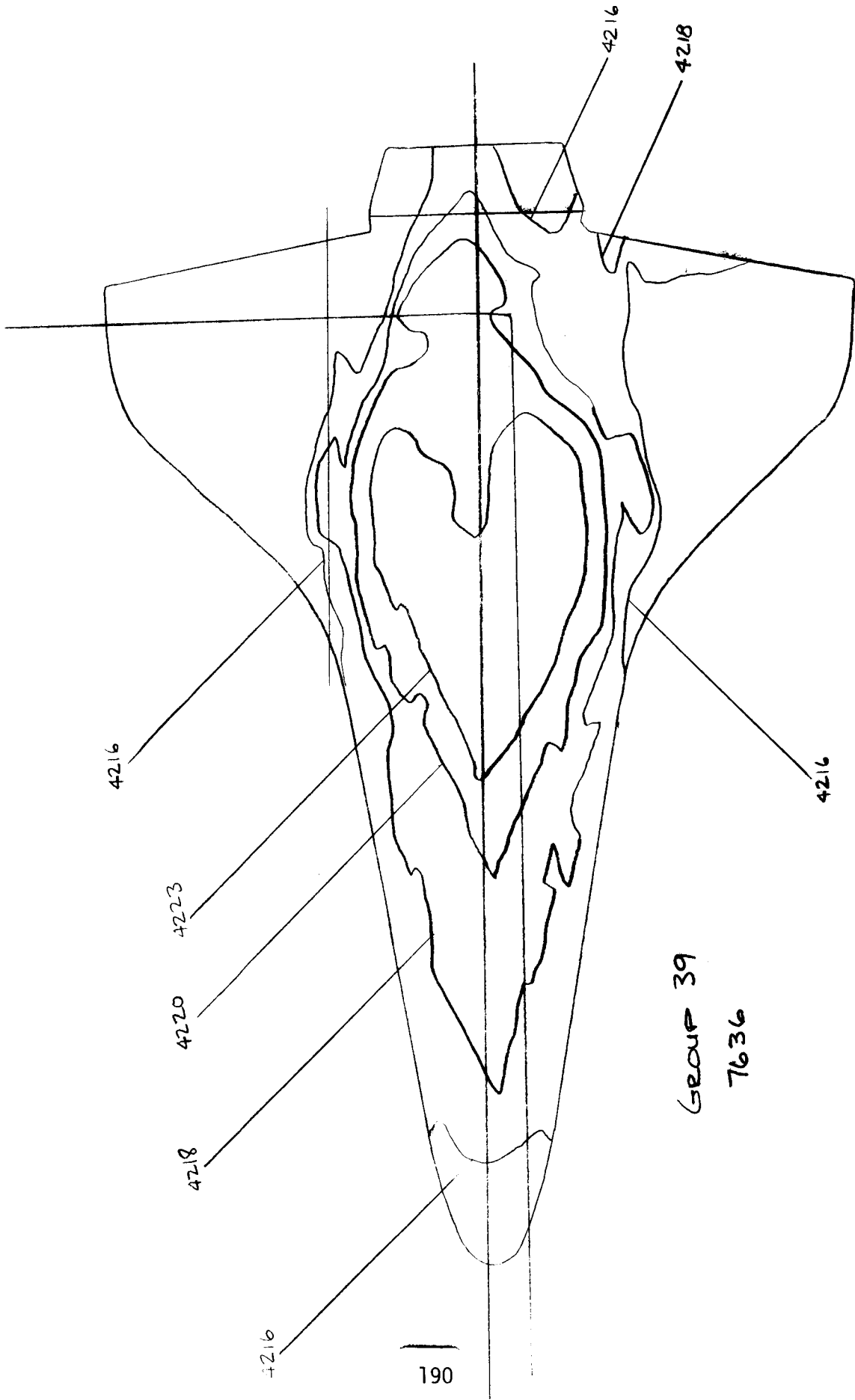
MODEL HAS LEFT CENTERLINE

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GROUP 39

7636

Q11.2.



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9/26/73

NASA-RI STS 044C

VA352

AEDCI(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSTA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
39	4	ORBITER R1	7.99	600.0	1331	29.99	.01	-30.00	180.00	.00
1-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MREF	SIREF		
(U <sub>0</sub> R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R= .0175F1)	(R= .0175F1)		
95.6	.062	2.769	3849	5.379E-05	7.781E-08	2.661E 06	4.103E-02	2.491E-02		
CAPERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(TO)	BETA(TO)				
10P(T)	7636									
SLICE(S)	6564	200	83	.0519	0	0				

PIC NO	TIME DELT	H(TO)	H(TO)/MREF	H(.910)	M(.910)/MREF	H(.912TO)	M(.912TO)/MREF	ST(TO)
1 4213(200)	3.23	1.85	5.702E-03	.1389	7.059E-03	.1720	6.856E-03	3.416E-03
1 4216(200)	3.45	1.88	5.663E-03	.1380	7.012E-03	.1708	6.810E-03	3.394E-03
1 4217(200)	4.30	2.93	4.534E-03	.1104	5.614E-03	.1367	5.452E-03	2.716E-03
1 4218(200)	4.33	2.95	4.515E-03	.1100	5.590E-03	.1362	5.429E-03	2.705E-03
1 4219(200)	5.38	4.00	3.877E-03	.0944	4.808E-03	.1169	4.662E-03	2.322E-03
1 4220(200)	5.38	4.00	3.877E-03	.0944	4.808E-03	.1169	4.662E-03	2.322E-03
1 4221(200)	6.46	5.08	3.442E-03	.0838	4.262E-03	.1038	4.139E-03	2.062E-03
1 4222(200)	6.46	5.08	3.442E-03	.0838	4.262E-03	.1038	4.139E-03	2.062E-03
1 4223(200)	7.53	6.16	3.127E-03	.0762	3.871E-03	.0943	3.760E-03	1.873E-03
1 4224(200)	7.53	6.16	3.127E-03	.0762	3.871E-03	.0943	3.760E-03	1.873E-03
1 4225(200)	8.61	7.23	2.885E-03	.0703	3.572E-03	.0870	3.469E-03	1.728E-03
1 4226(200)	8.61	7.23	2.885E-03	.0703	3.572E-03	.0870	3.469E-03	1.728E-03
1 4227(200)	9.69	8.31	2.692E-03	.0656	3.332E-03	.0812	3.237E-03	1.612E-03
1 4228(200)	9.69	8.31	2.692E-03	.0656	3.332E-03	.0812	3.237E-03	1.612E-03
1 4229(200)	10.76	9.39	2.533E-03	.0617	3.135E-03	.0764	3.045E-03	1.517E-03
1 4230(200)	10.76	9.39	2.533E-03	.0617	3.135E-03	.0764	3.045E-03	1.517E-03
1 4231(200)	11.64	10.46	2.399E-03	.0584	2.970E-03	.0723	2.884E-03	1.436E-03
1 4232(200)	11.64	10.46	2.399E-03	.0584	2.970E-03	.0723	2.884E-03	1.436E-03
1 4233(200)	12.51	11.54	2.284E-03	.0556	2.828E-03	.0689	2.747E-03	1.367E-03
1 4234(200)	12.51	11.54	2.284E-03	.0556	2.828E-03	.0689	2.747E-03	1.367E-03

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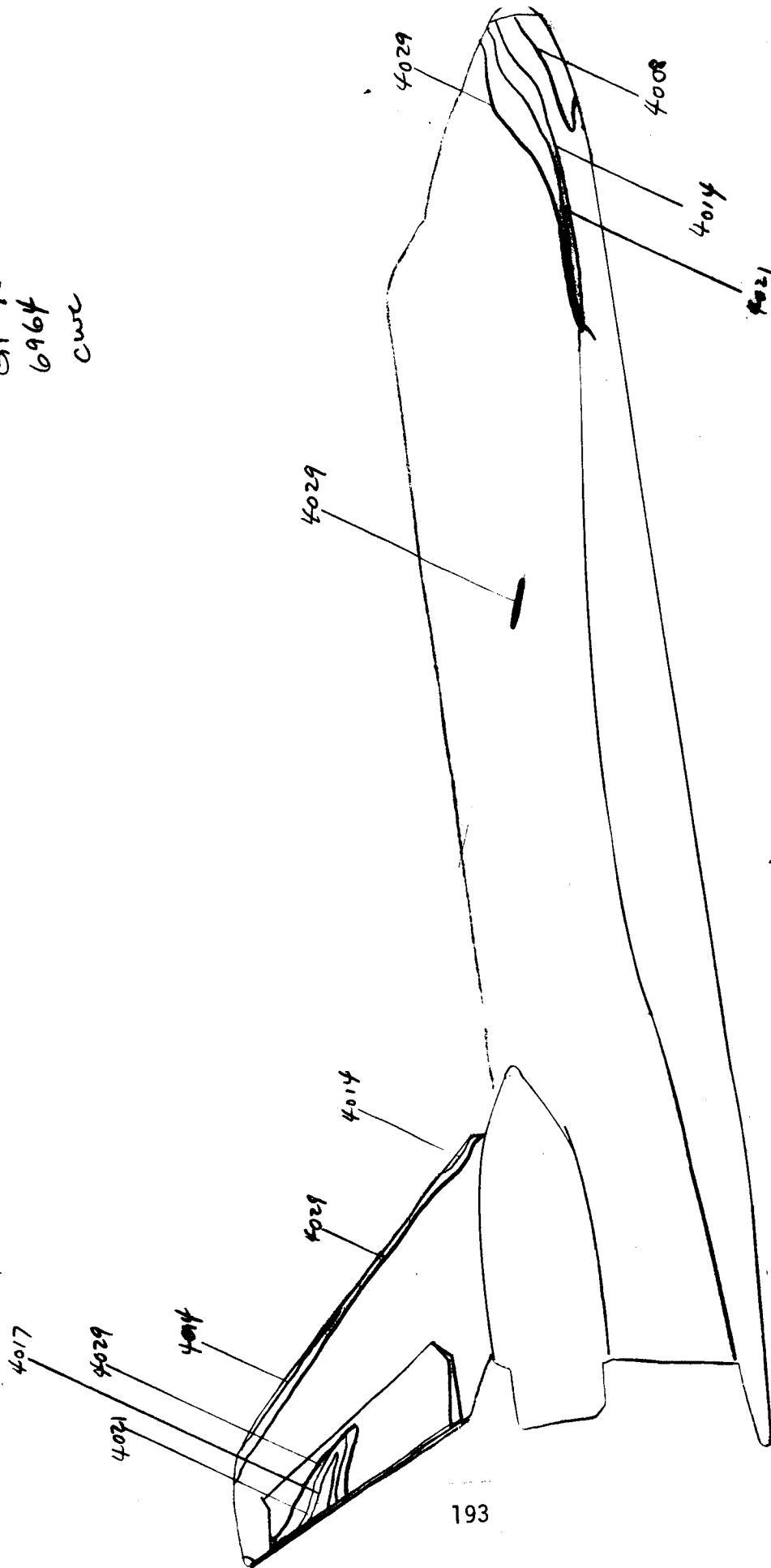
NASA-RI STS 044C

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

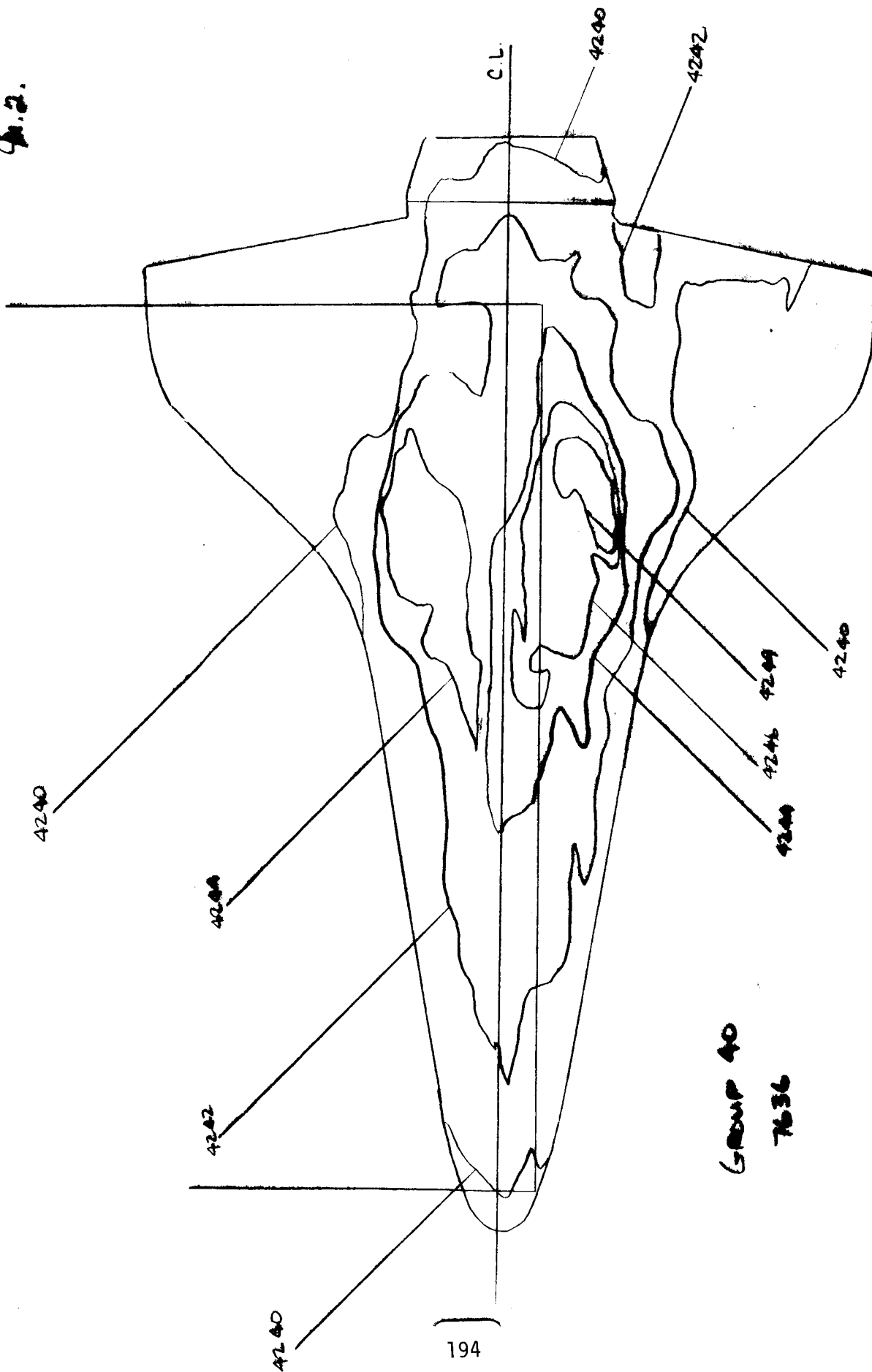
GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
39	4	UMETER R1	7.99	601.0	1331	29.99	.01	-50.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG H)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R=)	(R=)	(R=)		
96.6	.062	2.774	3849	5.388E-05	7.781E-08	2.665E 06	4.107E-02	2.489E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCKK)	TBAR(TO)	BETA(TO)				
LOP(T)	7636									
SIG(E(S)	5564	200	83	.0519	1.486E-01	1.4949E-01				
PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)		
1 4226(200)	13.59	12.61	.0532	2.705E-03	.0659	2.627E-03	.0640	1.308E-03		
5 3993(200)	13.59	12.61	.0532	2.705E-03	.0659	2.627E-03	.0640	1.308E-03		
1 4227(200)	15.07	13.69	.0511	2.596E-03	.0632	2.521E-03	.0614	1.255E-03		
5 3994(200)	15.07	13.69	.0511	2.596E-03	.0632	2.521E-03	.0614	1.255E-03		
1 4228(200)	16.14	14.77	.0492	2.500E-03	.0609	2.428E-03	.0591	1.209E-03		
5 3995(200)	16.14	14.77	.0492	2.500E-03	.0609	2.428E-03	.0591	1.209E-03		
1 4229(200)	17.22	15.84	.0475	2.413E-03	.0588	2.344E-03	.0571	1.167E-03		
5 3996(200)	17.22	15.84	.0475	2.413E-03	.0588	2.344E-03	.0571	1.167E-03		
1 4230(200)	18.30	16.92	.0459	2.335E-03	.0569	2.268E-03	.0552	1.130E-03		
5 3997(200)	18.30	16.92	.0459	2.335E-03	.0569	2.268E-03	.0552	1.130E-03		
1 4231(200)	19.37	18.00	.0445	2.264E-03	.0552	2.199E-03	.0536	1.095E-03		
5 3998(200)	19.37	18.00	.0445	2.264E-03	.0552	2.199E-03	.0536	1.095E-03		
1 4232(200)	20.45	19.07	.0433	2.200E-03	.0536	2.136E-03	.0520	1.063E-03		
5 3999(200)	20.45	19.07	.0433	2.200E-03	.0536	2.136E-03	.0520	1.063E-03		
1 4233(200)	21.52	20.15	.0421	2.140E-03	.0521	2.078E-03	.0506	1.035E-03		
5 4000(200)	21.52	20.15	.0421	2.140E-03	.0521	2.078E-03	.0506	1.035E-03		
1 4234(200)	22.15	20.17	.0410	2.085E-03	.0508	2.025E-03	.0493	1.008E-03		
5 4001(200)	22.15	20.17	.0410	2.085E-03	.0508	2.025E-03	.0493	1.008E-03		
1 4235(200)	22.63	21.25	.0400	2.034E-03	.0495	1.976E-03	.0481	9.830E-04		
5 4002(200)	22.63	21.25	.0400	2.034E-03	.0495	1.976E-03	.0481	9.830E-04		
1 4236(200)	23.68	22.30	.0400	2.033E-03	.0495	1.975E-03	.0470	9.607E-04		
5 4003(200)	23.68	22.30	.0400	2.033E-03	.0495	1.975E-03	.0470	9.607E-04		
1 4237(200)	24.75	23.38	.0391	1.986E-03	.0484	1.929E-03	.0470	9.602E-04		
5 4004(200)	24.75	23.38	.0391	1.986E-03	.0484	1.929E-03	.0470	9.602E-04		

GP 40  
6964  
CWC



GROUP 40  
6964

GROUP 40  
7636  
P.2.



GROUP 40  
7636

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9/26/73

NASA-RI STS OHAC

VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
40	5	ORBITER R2	7.99	597.8	1327	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R=.0175FI)	(R=.0175FI)		
90.4	.062	2.759	38.4	5.373E-05	7.761E-08	2.661E 06	4.094E-02	2.492E-02		
CAMERA	HOLL NO	PAINT IEMP (DEG F)	INITIAL IEMP (DEG F)	SQUARE ROOT (RHOXCHK)	TBAR(TO)	BETA(TO)				
TOP(T)	7636									
SIDE(S)	6564	200	81	.0519	0	0				

PIC NO	TIME DELTIME	H(10)	H(TO)/HREF	H(.910)	M(.910)/HREF	M(.912TO)	M(.912TO)/HREF	ST(TO)
I 4237(200)	.05	MODEL HAS NOT REACHED CENTERLINE						
S 4004(200)	.05	MODEL HAS NOT REACHED CENTERLINE						
S 4005(200)	1.10	MODEL HAS NOT REACHED CENTERLINE						
I 4238(200)	1.13	MODEL HAS NOT REACHED CENTERLINE						
I 4239(200)	2.18	MODEL HAS NOT REACHED CENTERLINE						
S 4006(200)	2.18	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.45								
I 4240(200)	3.25	1.88	5.783E-03	.1409	7.163E-03	.1745	6.958E-03	.1695
S 4007(200)	3.25	1.88	5.783E-03	.1409	7.163E-03	.1745	6.958E-03	.1695
I 4241(200)	4.33	2.95	4.610E-03	.1123	5.711E-03	.1391	5.547E-03	.1351
S 4008(200)	4.33	2.95	4.610E-03	.1123	5.711E-03	.1391	5.547E-03	.1351
I 4242(200)	5.41	4.03	3.947E-03	.0961	4.889E-03	.1191	4.748E-03	.1156
S 4009(200)	5.41	4.03	3.947E-03	.0961	4.889E-03	.1191	4.748E-03	.1156
I 4243(200)	6.48	5.11	3.506E-03	.0854	4.343E-03	.1057	4.218E-03	.1027
S 4010(200)	6.48	5.11	3.506E-03	.0854	4.343E-03	.1057	4.218E-03	.1027
I 4244(200)	7.56	6.18	3.166E-03	.0776	3.947E-03	.0961	3.834E-03	.0933
S 4011(200)	7.56	6.18	3.166E-03	.0776	3.947E-03	.0961	3.834E-03	.0933
I 4245(200)	8.63	7.26	2.940E-03	.0716	3.643E-03	.0887	3.538E-03	.0861
S 4012(200)	8.63	7.26	2.940E-03	.0716	3.643E-03	.0887	3.538E-03	.0861
I 4246(200)	9.71	8.33	2.744E-03	.0668	3.399E-03	.0827	3.302E-03	.0804
S 4013(200)	9.71	8.33	2.744E-03	.0668	3.399E-03	.0827	3.302E-03	.0804
I 4247(200)	10.79	9.41	2.582E-03	.0629	3.199E-03	.0779	3.107E-03	.0756
S 4014(200)	10.79	9.41	2.582E-03	.0629	3.199E-03	.0779	3.107E-03	.0756
I 4248(200)	11.86	10.49	2.446E-03	.0595	3.030E-03	.0738	2.943E-03	.0716
S 4015(200)	11.86	10.49	2.446E-03	.0595	3.030E-03	.0738	2.943E-03	.0716
I 4249(200)	12.94	11.56	2.330E-03	.0567	2.886E-03	.0702	2.803E-03	.0682
S 4016(200)	12.94	11.56	2.330E-03	.0567	2.886E-03	.0702	2.803E-03	.0682

131

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 9/26/73

NASA-R1 STS 0H4C

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW  
 40 5 ORBITER R2 7.99 602.1 1327 29.99 .01 -30.00 180.00 .00

I-INF P-INF U-INF V-INF RHO-INF MU-INF RE/FT HREF SIREF  
 (DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-L) (H=.0175FT) (H=.0175FT)  
 96.4 .062 2.775 3844 5.412E-05 7.761E-08 2.680E 06 4.109E-02 2.483E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOCXK) TBAR(TO) BETA(TO)  
 10P(T) 7636  
 SIDE(S) 6564 200 81 .0519 1.514E-01 1.5264E-01

PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.91TO)	H(.91TO)/HREF	H(.912TO)	H(.912TO)/HREF	S1(TO)
I 4250(200)	14.02	12.64	2.228E-03	.0542	2.760E-03	.0672	2.681E-03	.0653	1.330E-03
S 4017(200)	14.02	12.64	2.228E-03	.0542	2.760E-03	.0672	2.681E-03	.0653	1.330E-03
I 4251(200)	15.09	13.72	2.139E-03	.0521	2.650E-03	.0645	2.574E-03	.0626	1.277E-03
S 4018(200)	15.09	13.72	2.139E-03	.0521	2.650E-03	.0645	2.574E-03	.0626	1.277E-03
I 4252(200)	16.17	14.79	2.060E-03	.0501	2.552E-03	.0621	2.478E-03	.0603	1.229E-03
S 4019(200)	16.17	14.79	2.060E-03	.0501	2.552E-03	.0621	2.478E-03	.0603	1.229E-03
I 4253(200)	17.24	15.87	1.949E-03	.0484	2.464E-03	.0600	2.393E-03	.0582	1.187E-03
S 4020(200)	17.24	15.87	1.949E-03	.0484	2.464E-03	.0600	2.393E-03	.0582	1.187E-03
I 4021(200)	18.32	16.94	1.924E-03	.0468	2.384E-03	.0580	2.314E-03	.0564	1.149E-03
S 4254(200)	18.35	16.97	1.923E-03	.0468	2.383E-03	.0580	2.314E-03	.0564	1.149E-03
I 4255(200)	19.40	18.02	1.866E-03	.0454	2.312E-03	.0563	2.245E-03	.0546	1.114E-03
S 4022(200)	19.40	18.02	1.866E-03	.0454	2.312E-03	.0563	2.245E-03	.0546	1.114E-03
I 4023(200)	20.47	19.10	1.813E-03	.0441	2.246E-03	.0547	2.181E-03	.0531	1.082E-03
S 4256(200)	20.50	19.12	1.812E-03	.0441	2.245E-03	.0546	2.180E-03	.0530	1.081E-03
I 4024(200)	21.55	20.17	1.764E-03	.0429	2.185E-03	.0532	2.122E-03	.0516	1.052E-03
S 4257(200)	21.57	20.20	1.763E-03	.0429	2.184E-03	.0531	2.121E-03	.0516	1.052E-03
I 4025(200)	22.63	21.25	1.719E-03	.0418	2.129E-03	.0518	2.068E-03	.0503	1.025E-03
S 4258(200)	22.65	21.27	1.718E-03	.0418	2.128E-03	.0518	2.068E-03	.0503	1.025E-03
I 4026(200)	23.70	22.33	1.677E-03	.0408	2.077E-03	.0506	2.017E-03	.0491	1.001E-03
S 4259(200)	23.73	22.35	1.676E-03	.0408	2.076E-03	.0505	2.016E-03	.0491	1.000E-03
I 4027(200)	24.78	23.40	1.638E-03	.0399	2.029E-03	.0494	1.970E-03	.0479	9.762E-04
S 4260(200)	24.80	23.43	1.637E-03	.0399	2.028E-03	.0493	1.969E-03	.0479	9.762E-04
I 4028(200)	25.85	24.48	1.601E-03	.0390	1.984E-03	.0483	1.927E-03	.0469	9.555E-04
S 4261(200)	25.88	24.50	1.600E-03	.0389	1.983E-03	.0482	1.926E-03	.0469	9.555E-04
I 4029(200)	26.53	25.55	1.567E-03	.0381	1.941E-03	.0472	1.886E-03	.0459	9.350E-04

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NASA-RI STS 044C  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSTA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
40	5	ORBITER R2	7.99	602.3	1327	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MHEF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(R= .0175FT)		
9.4	.062	2.780	38.4	5.414E-05	7.760E-08	2.682E 06	4.109E-02	2.483E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCK)	TBAR(TO)	BE(A(TO)				
10-(T)	7636									
STLE(S)	6564	200	81	.0519	1.514E-01	1.5264E-01				

PIC NO	TIME DELTIME	H(TO)	M(TO)/HREF	H(.910)	M(.910)/HREF	M(.912TO)/HREF	ST(TO)
1	4262(200) 26.56 25.58	1.566E-03	.0381	1.940E-03	.0472	1.885E-03	9.345E-04
	27.46	MODEL HAS LEFT CENTERLINE					
2	4030(200) 28.01 26.63	1.535E-03	.0374	1.902E-03	.0463	1.847E-03	9.159E-04
3	4263(200) 28.03 26.66	1.534E-03	.0373	1.901E-03	.0463	1.846E-03	9.155E-04

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Group 41  
7636

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9/26/73

NASA-RI STS 0M4C  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL 8

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
41	10	ORBITER R7	7.99	599.6	1327	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(M= .0175FT)		
90.4	.062	2.767	3844	5.390E-05	7.760E-08	2.670E 06	4.100E-02	2.488E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCKX)	TBAR(10)	BETA(10)				
104(T)		7636								
SIDE(S)		6964	300	88	.0544	0	0	0		

PIC NO	TIME DELTIME	H(10)	H(TO)/HREF	H(.910)	H(.910)/HREF	M(.912TO)	M(.912TO)/HREF	ST(10)
1 4264(300)	.05	MODEL HAS NOT REACHED CENTERLINE	1.239E-02	1.591E-02	.3022	1.591E-02	.3022	.3749
2 4031(300)	.05	MODEL HAS NOT REACHED CENTERLINE	1.230E-02	1.580E-02	.3002	1.580E-02	.3002	.3724
3 4265(300)	1.10	MODEL HAS NOT REACHED CENTERLINE	9.850E-03	1.265E-02	.2403	1.265E-02	.2403	.2981
4 4036(300)	4.33	MODEL HAS NOT REACHED CENTERLINE	9.808E-03	1.260E-02	.2393	1.260E-02	.2393	.2968
5 4269(300)	5.38	MODEL HAS NOT REACHED CENTERLINE	8.423E-03	1.082E-02	.2054	1.082E-02	.2054	.2547
6 4037(300)	5.41	MODEL HAS NOT REACHED CENTERLINE	8.377E-03	1.078E-02	.2047	1.078E-02	.2047	.2540
7 4270(300)	6.46	MODEL HAS NOT REACHED CENTERLINE	7.478E-03	9.603E-03	.1824	9.603E-03	.1824	.2263
8 4038(300)	6.48	MODEL HAS NOT REACHED CENTERLINE	7.459E-03	9.579E-03	.1820	9.579E-03	.1820	.2257
9 4271(300)	7.53	MODEL HAS NOT REACHED CENTERLINE	6.793E-03	8.723E-03	.1657	8.723E-03	.1657	.2055
10 4039(300)	7.56	MODEL HAS NOT REACHED CENTERLINE	6.719E-03	8.706E-03	.1654	8.706E-03	.1654	.2051
11 4272(300)	8.61	MODEL HAS NOT REACHED CENTERLINE	6.267E-03	8.048E-03	.1529	8.048E-03	.1529	.1896
12 4040(300)	8.63	MODEL HAS NOT REACHED CENTERLINE	6.256E-03	8.034E-03	.1526	8.034E-03	.1526	.1893
13 4273(300)	9.71	MODEL HAS NOT REACHED CENTERLINE	5.838E-03	7.498E-03	.1423	7.498E-03	.1423	.1766
14 4041(300)	9.71	MODEL HAS NOT REACHED CENTERLINE	5.838E-03	7.498E-03	.1423	7.498E-03	.1423	.1766
15 4274(300)	10.76	MODEL HAS NOT REACHED CENTERLINE	5.505E-03	7.065E-03	.1342	7.065E-03	.1342	.1662
16 4042(300)	10.79	MODEL HAS NOT REACHED CENTERLINE	5.494E-03	7.056E-03	.1340	7.056E-03	.1340	.1662
17 4275(300)	11.84	MODEL HAS NOT REACHED CENTERLINE	5.211E-03	6.892E-03	.1270	6.892E-03	.1270	.1576
18 4043(300)	11.86	MODEL HAS NOT REACHED CENTERLINE	5.205E-03	6.884E-03	.1269	6.884E-03	.1269	.1574
19 4043(300)	12.91	MODEL HAS NOT REACHED CENTERLINE	4.962E-03	6.372E-03	.1210	6.372E-03	.1210	.2.955E-03

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NASA-RI STS 0H4C  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

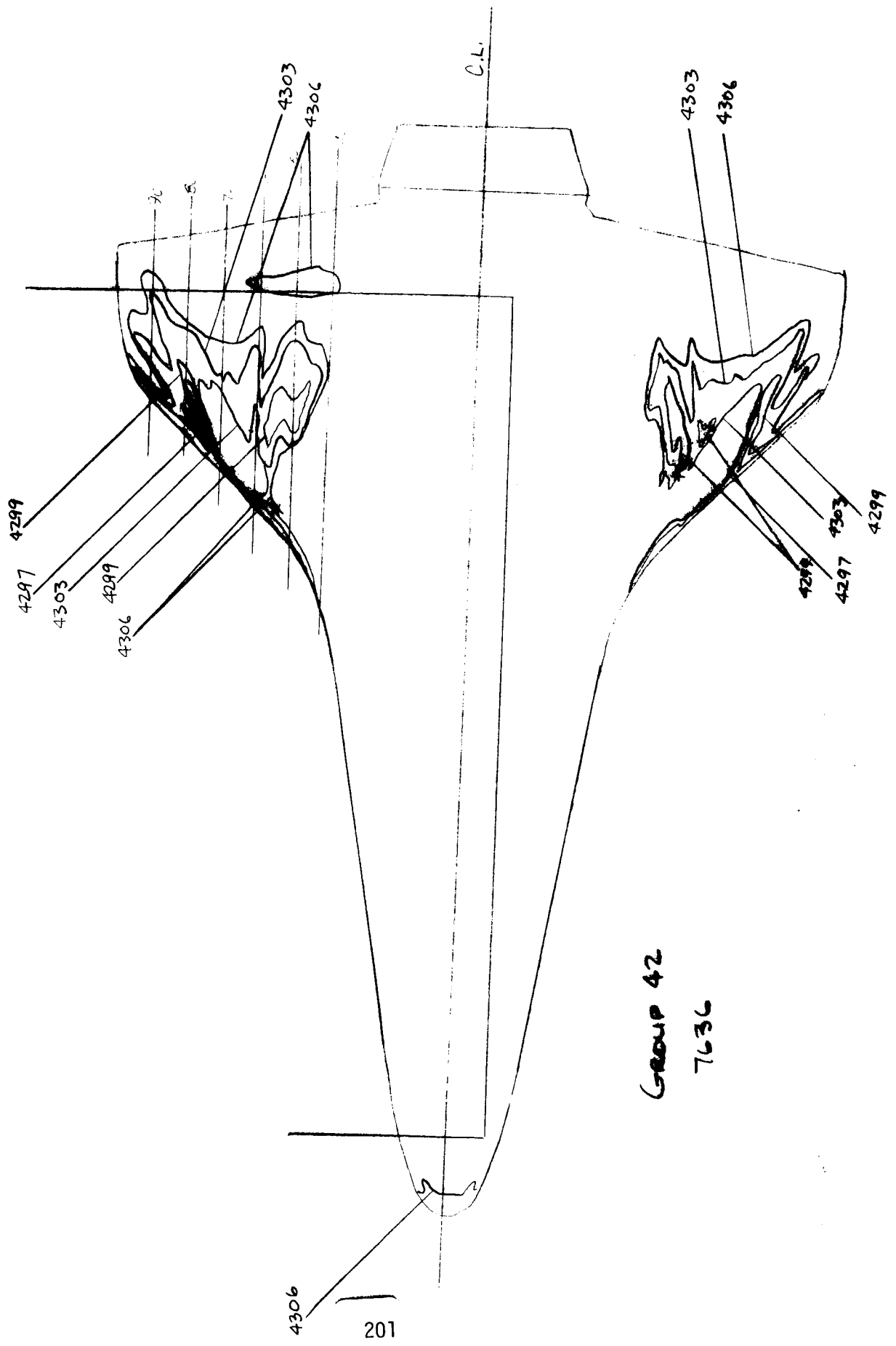
GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
41	10	URITER R7	7.99	600.1	1327	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(H= .0175FT)			
96.4	.062	2.769	38.4	5.394E-05	7.761E-08	2.672E 06	4.102E-02	2.487E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCKX)	TBAR(TO)	BETA(TO)				
10P(T)	7636		88	.0544	2.721E-01	3.0982E-01				
SLOE(S)	6564	300								

PIC NO	TIME	DELTIME	H(TO)	HREF	H(.910)	H(.910)/HREF	H(.912TO)	HREF	ST(TO)
1	4276(300)	12.54	4.957E-03	.1208	6.365E-03	.1552	6.148E-03	.1499	2.952E-03
2	4044(300)	13.59	4.745E-03	.1157	6.094E-03	.1486	5.887E-03	.1435	2.826E-03
3	4277(300)	14.02	4.741E-03	.1156	6.088E-03	.1484	5.881E-03	.1433	2.823E-03
4	4045(300)	15.07	4.555E-03	.1111	5.850E-03	.1426	5.650E-03	.1378	2.714E-03
5	4278(300)	15.09	4.551E-03	.1110	5.845E-03	.1425	5.645E-03	.1376	2.711E-03
6	4046(300)	16.14	4.366E-03	.1069	5.633E-03	.1373	5.441E-03	.1326	2.611E-03
7	4279(300)	16.17	4.342E-03	.1068	5.628E-03	.1372	5.436E-03	.1325	2.609E-03
8	4047(300)	17.22	4.234E-03	.1032	5.438E-03	.1325	5.253E-03	.1280	2.520E-03
9	4280(300)	17.24	4.231E-03	.1031	5.434E-03	.1324	5.248E-03	.1279	2.519E-03
10	4048(300)	18.20	4.048E-03	.0999	5.262E-03	.1282	5.083E-03	.1239	2.439E-03
11	4281(300)	18.32	4.044E-03	.0998	5.258E-03	.1282	5.079E-03	.1238	2.437E-03
12	4049(300)	19.37	3.913E-03	.0968	5.102E-03	.1244	4.928E-03	.1201	2.365E-03
13	4282(300)	19.40	3.910E-03	.0968	5.099E-03	.1243	4.925E-03	.1200	2.363E-03
14	4050(300)	20.45	3.859E-03	.0941	4.959E-03	.1208	4.787E-03	.1167	2.297E-03
15	4283(300)	20.47	3.857E-03	.0940	4.953E-03	.1207	4.784E-03	.1166	2.296E-03
16	4051(300)	21.52	3.755E-03	.0915	4.825E-03	.1175	4.658E-03	.1135	2.235E-03
17	4284(300)	21.55	3.753E-03	.0915	4.819E-03	.1175	4.655E-03	.1135	2.234E-03
18	4052(300)	22.63	3.656E-03	.0891	4.696E-03	.1144	4.535E-03	.1105	2.177E-03
19	4285(300)	22.63	3.656E-03	.0891	4.696E-03	.1144	4.535E-03	.1105	2.177E-03
20	4053(300)	23.70	3.567E-03	.0869	4.581E-03	.1116	4.425E-03	.1078	2.123E-03
21	4286(300)	23.70	3.567E-03	.0869	4.581E-03	.1116	4.425E-03	.1078	2.123E-03
22	4054(300)	24.78	3.484E-03	.0849	4.474E-03	.1090	4.322E-03	.1053	2.073E-03
23	4287(300)	24.78	3.484E-03	.0849	4.474E-03	.1090	4.322E-03	.1053	2.073E-03
24	4054(300)	25.15	MODEL HAS LEFT CENTERLINE						
25	4288(300)	25.15	3.407E-03	.0830	4.375E-03	.1066	4.226E-03	.1030	2.026E-03
26	4055(300)	25.85	3.407E-03	.0830	4.375E-03	.1066	4.226E-03	.1030	2.026E-03

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Group 42  
7636  
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Group 42  
7636

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 9/26/73

NASA-RI STS OH4C

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VAJ52

GROUP CONFIG MODEL MACH NO PO (PSIA) TO (DEG R) ALPHA-MODEL ALPHA-SECUR ALPHA-PREBEND ROLL-MODEL YAW  
 42 4 CREITER R1 8.00 860.0 1330 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF SIREF  
 (DEG R) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .0175FT) (R= .0175FT)  
 96.4 .088 3.947 38.8 7.670E-05 7.758E-08 3.805E 06 4.898E-02 2.086E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOACXK) TBAR(TO) BETA(TO)  
 TOP(T) 7636  
 SLUE(S) 6564 550 83 .0542 0 0

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 4284(550)	.05	MODEL HAS NOT REACHED CENTERLINE						
2 4056(550)	.05	MODEL HAS NOT REACHED CENTERLINE						
3 4057(550)	1.10	MODEL HAS NOT REACHED CENTERLINE						
4 4290(550)	1.13	MODEL HAS NOT REACHED CENTERLINE						
5 4058(550)	2.18	MODEL HAS NOT REACHED CENTERLINE						
6 4291(550)	2.20	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.45								
1 4292(550)	3.25	1.88	4.276E-02	.8726	6.906E-02	1.4081	6.401E-02	1.3062
2 4059(550)	3.25	1.88	4.276E-02	.8726	6.906E-02	1.4081	6.401E-02	1.3062
3 4293(550)	4.33	2.95	3.409E-02	.6957	5.501E-02	1.1225	5.103E-02	1.0413
4 4060(550)	4.33	2.95	3.409E-02	.6957	5.501E-02	1.1225	5.103E-02	1.0413
5 4294(550)	5.41	4.03	2.918E-02	.5955	4.709E-02	.9608	4.368E-02	.8913
6 4061(550)	5.41	4.03	2.918E-02	.5955	4.709E-02	.9608	4.368E-02	.8913
7 4295(550)	6.48	5.11	2.593E-02	.5290	4.183E-02	.8535	3.881E-02	.7917
8 4062(550)	6.48	5.11	2.593E-02	.5290	4.183E-02	.8535	3.881E-02	.7917
9 4296(550)	7.56	6.18	2.356E-02	.4807	3.802E-02	.7756	3.527E-02	.7195
10 4063(550)	7.56	6.18	2.356E-02	.4807	3.802E-02	.7756	3.527E-02	.7195
11 4297(550)	8.63	7.26	2.174E-02	.4436	3.509E-02	.7158	3.255E-02	.6640
12 4064(550)	8.63	7.26	2.174E-02	.4436	3.509E-02	.7158	3.255E-02	.6640
13 4298(550)	9.71	8.33	2.029E-02	.4139	3.274E-02	.6678	3.037E-02	.6195
14 4065(550)	9.71	8.33	2.029E-02	.4139	3.274E-02	.6678	3.037E-02	.6195
15 4299(550)	10.79	9.41	1.910E-02	.3895	3.081E-02	.6285	2.858E-02	.5830
16 4066(550)	10.79	9.41	1.910E-02	.3895	3.081E-02	.6285	2.858E-02	.5830
17 4300(550)	11.86	10.49	1.809E-02	.3690	2.918E-02	.5944	2.708E-02	.5523
18 4067(550)	11.86	10.49	1.809E-02	.3690	2.918E-02	.5944	2.708E-02	.5523
19 4301(550)	12.94	11.56	1.723E-02	.3515	2.780E-02	.5672	2.579E-02	.5261
20 4068(550)	12.94	11.56	1.723E-02	.3515	2.780E-02	.5672	2.579E-02	.5261

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 9/26/73

NASA-HI STS 044C

VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-A-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
42	4	URBITER R1	8.00	861.1	1330	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LBS-SEC/FT3)	(FT-1)	(R= .0175FI)	(R= .0175FI)	(R= .0175FI)		
96.4	.088	3.952	3848	7.680E-05	7.758E-08	3.809E 06	4.901E-02	2.085E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHO/CXK)	T8AN(TO)	BETA(TO)				
IOP(T)	7636		83							
SIUE(S)	6564	500	.0542		5.935E-01	1.0808E 00				

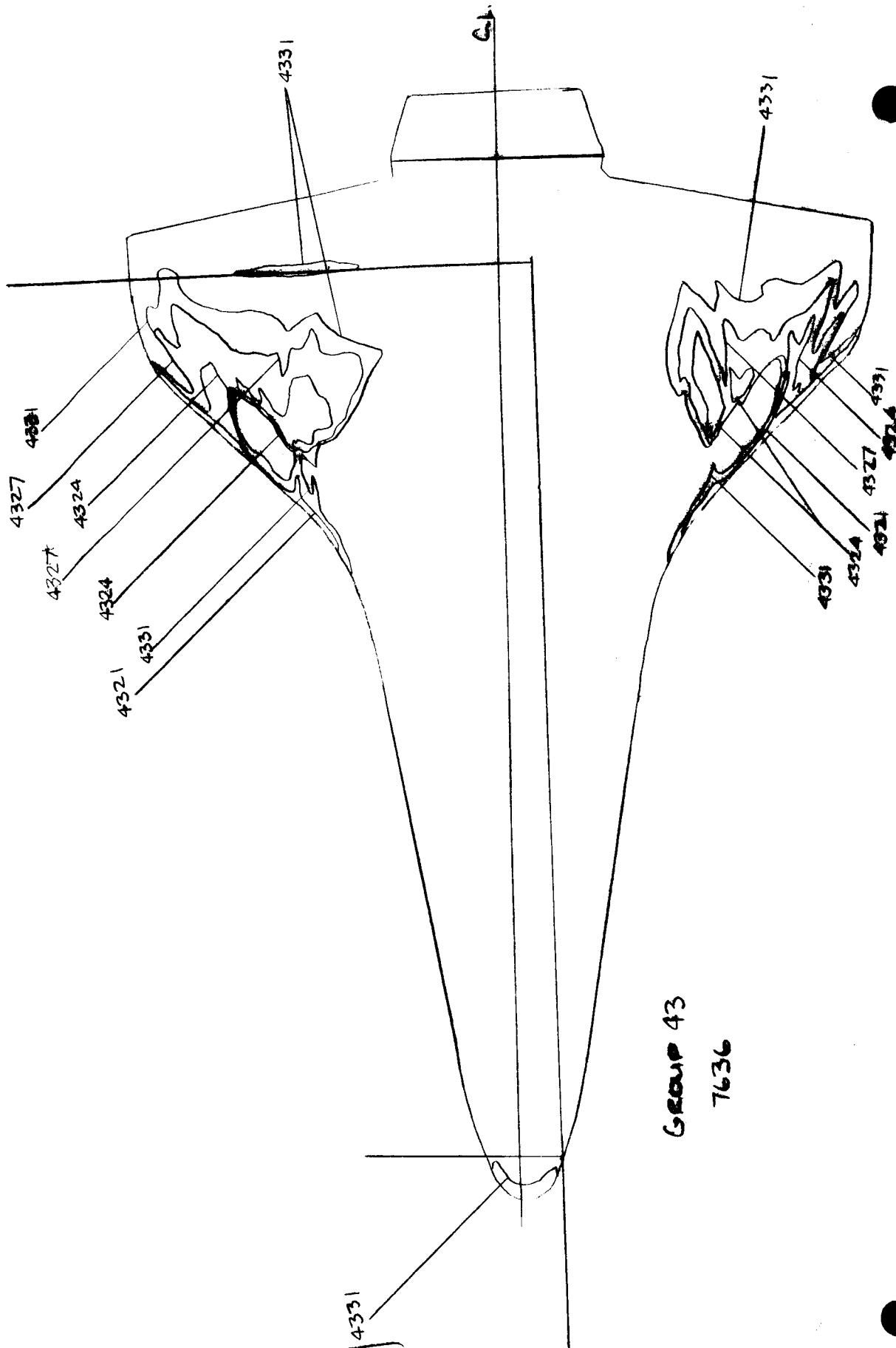
  

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(TO)
4301(550)	12.56	1.721E-02	.3511	2.777E-02	.5665	2.576E-02	.5255	7.095E-03
4302(550)	14.02	1.648E-02	.3360	2.659E-02	.5422	2.466E-02	.5030	6.788E-03
4303(550)	14.04	1.646E-02	.3357	2.658E-02	.5417	2.464E-02	.5025	6.782E-03
4304(550)	15.09	1.582E-02	.3226	2.552E-02	.5206	2.368E-02	.4829	6.518E-03
4305(550)	15.09	1.582E-02	.3226	2.552E-02	.5206	2.368E-02	.4829	6.518E-03
4306(550)	16.17	1.523E-02	.3106	2.458E-02	.5012	2.280E-02	.4649	6.274E-03
4307(550)	16.19	1.522E-02	.3103	2.456E-02	.5008	2.278E-02	.4645	6.268E-03
4308(550)	17.24	1.471E-02	.2998	2.373E-02	.4838	2.201E-02	.4488	6.055E-03
4309(550)	17.27	1.469E-02	.2996	2.371E-02	.4834	2.199E-02	.4484	6.049E-03
4310(550)	18.32	1.423E-02	.2903	2.298E-02	.4685	2.130E-02	.4346	5.866E-03
4311(550)	18.35	1.422E-02	.2901	2.295E-02	.4681	2.129E-02	.4342	5.861E-03
4312(550)	19.40	1.380E-02	.2814	2.227E-02	.4540	2.066E-02	.4212	5.682E-03
4313(550)	19.42	1.379E-02	.2812	2.225E-02	.4537	2.064E-02	.4209	5.678E-03
4314(550)	20.02	1.341E-02	.2734	2.163E-02	.4412	2.006E-02	.4092	5.523E-03
4315(550)	20.47	1.340E-02	.2732	2.162E-02	.4409	2.005E-02	.4090	5.520E-03
4316(550)	21.55	1.304E-02	.2659	2.105E-02	.4291	1.952E-02	.3981	5.371E-03
4317(550)	21.55	1.304E-02	.2659	2.105E-02	.4291	1.952E-02	.3981	5.371E-03
4318(550)	22.63	1.271E-02	.2592	2.051E-02	.4183	1.902E-02	.3880	5.237E-03
4319(550)	22.63	1.271E-02	.2592	2.051E-02	.4183	1.902E-02	.3880	5.237E-03
4320(550)	23.70	1.240E-02	.2529	2.011E-02	.4080	1.856E-02	.3785	5.107E-03
4321(550)	23.70	1.240E-02	.2529	2.011E-02	.4080	1.856E-02	.3785	5.107E-03
4322(550)	24.75	1.212E-02	.2470	1.955E-02	.3985	1.814E-02	.3696	4.986E-03
4323(550)	24.78	1.211E-02	.2468	1.954E-02	.3983	1.813E-02	.3695	4.983E-03

GROUP 43

7636

Ch. 2.



GROUP 43

7636

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 9/26/73

NASA-RI STS OHAC  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(IDEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
43	5	OHATER R2	8.00	858.4	1329	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(UFG M)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175F1)	(M= .0175FT)			
95.3	.088	3.939	38.7	7.660E-05	7.753E-08	3.800E 06	4.893E-02	2.087E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(TO)	BETA(TO)				
104(T)	7636									
SIDE(S)	6564									
			550		83	.0542			0	0

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(-910)	H(-910)/HREF	H(-912TU)	H(-912TU)/HREF	ST(TO)
1	4313(550)	.05	MODEL HAS NOT REACHED CENTERLINE	6.927E-02	1.4159	6.424E-02	1.3130	1.773E-02
2	4084(550)	.05	MODEL HAS NOT REACHED CENTERLINE	6.927E-02	1.4159	6.424E-02	1.3130	1.773E-02
3	4317(550)	1.10	MODEL HAS NOT REACHED CENTERLINE	5.523E-02	1.1282	5.121E-02	1.0463	1.412E-02
4	4314(550)	1.13	MODEL HAS NOT REACHED CENTERLINE	5.499E-02	1.1236	5.100E-02	1.0419	1.406E-02
5	4085(550)	2.18	MODEL HAS NOT REACHED CENTERLINE	4.728E-02	.9661	4.384E-02	.8959	1.209E-02
6	4315(550)	2.20	MODEL HAS NOT REACHED CENTERLINE	4.713E-02	.9632	4.371E-02	.8932	1.206E-02
7	4086(550)	2.45	MODEL HAS NOT REACHED CENTERLINE	4.190E-02	.8580	3.895E-02	.7957	1.074E-02
8	4316(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	4.200E-02	.8559	3.895E-02	.7937	1.071E-02
9	4087(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	3.817E-02	.7797	3.540E-02	.7231	9.760E-03
10	4320(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	3.809E-02	.7782	3.532E-02	.7216	9.740E-03
11	4088(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	3.523E-02	.7196	3.207E-02	.6673	9.007E-03
12	4321(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	3.517E-02	.7184	3.201E-02	.6662	8.992E-03
13	4089(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	3.287E-02	.6714	3.048E-02	.6226	8.402E-03
14	4322(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	3.282E-02	.6705	3.044E-02	.6218	8.391E-03
15	4090(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	3.094E-02	.6319	2.869E-02	.5860	7.909E-03
16	4323(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	3.089E-02	.6311	2.865E-02	.5853	7.899E-03
17	4091(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	2.931E-02	.5987	2.718E-02	.5552	7.494E-03
18	4324(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	2.927E-02	.5980	2.714E-02	.5545	7.484E-03
19	4092(550)	3.25	MODEL HAS NOT REACHED CENTERLINE	2.791E-02	.5700	2.588E-02	.5286	7.134E-03

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NASA-HI STS 0H4C

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP	CONFIG	MODEL	MACH NO	PO(P/SIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
43	5	ORBITER R2	8.00	859.4	1329	29.99	.01	-30.00	180.00	.00
T- INF	P- INF	U- INF	V- INF	RHO- INF	MU- INF	RE/ FT	MREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R= .0175F1)	(R= .0175F1)		
96.3	.088	3.944	3847	7.669E-05	7.754E-08	3.805E 06	4.896E-02	2.086E-02		
CAMERA	ROLL NO	PAINT IEMP	(DEG F)	INITIAL TEMP	(DEG F)	SQUARE ROOT	(RHUXCKX)	TBAR(TO)	BEIA(TO)	
TOP(T)	7636			83		.0542		5.942E-01	1.0836E 00	
SIDE(S)	6564	550								

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H( .910)	H( .910)/HREF	H( .91210)	H( .91210)/HREF	ST(TO)
1 4325(550)	12.56	1.725E-02	.3524	2.788E-02	.5694	2.585E-02	.5280	7.125E-03
2 4093(550)	14.02	1.652E-02	.3375	2.669E-02	.5453	2.475E-02	.5057	6.826E-03
3 4326(550)	14.04	1.650E-02	.3372	2.667E-02	.5448	2.473E-02	.5052	6.819E-03
4 4094(550)	15.09	1.566E-02	.3239	2.562E-02	.5234	2.376E-02	.4854	6.550E-03
5 4327(550)	15.12	1.549E-02	.3236	2.560E-02	.5229	2.374E-02	.4849	6.545E-03
6 4095(550)	16.17	1.527E-02	.3119	2.468E-02	.5040	2.288E-02	.4673	6.306E-03
7 4328(550)	16.19	1.526E-02	.3117	2.465E-02	.5036	2.286E-02	.4670	6.302E-03
8 4096(550)	17.22	1.476E-02	.3014	2.384E-02	.4871	2.211E-02	.4517	6.096E-03
9 4329(550)	17.24	1.474E-02	.3012	2.382E-02	.4867	2.209E-02	.4513	6.090E-03
10 4097(550)	18.30	1.427E-02	.2914	2.307E-02	.4713	2.140E-02	.4370	5.898E-03
11 4330(550)	18.32	1.427E-02	.2914	2.305E-02	.4709	2.138E-02	.4367	5.893E-03
12 4098(550)	19.40	1.384E-02	.2827	2.236E-02	.4568	2.073E-02	.4237	5.720E-03
13 4331(550)	19.40	1.384E-02	.2827	2.236E-02	.4568	2.073E-02	.4237	5.720E-03
14 4099(550)	20.45	1.345E-02	.2747	2.173E-02	.4438	2.015E-02	.4116	5.554E-03
15 4332(550)	20.47	1.344E-02	.2745	2.172E-02	.4435	2.014E-02	.4113	5.550E-03
16 4100(550)	21.52	1.308E-02	.2673	2.114E-02	.4319	1.961E-02	.4005	5.406E-03
17 4333(550)	21.55	1.308E-02	.2671	2.113E-02	.4316	1.959E-02	.4003	5.403E-03
18 4101(550)	22.60	1.275E-02	.2604	2.060E-02	.4207	1.910E-02	.3901	5.264E-03
19 4334(550)	22.63	1.274E-02	.2602	2.059E-02	.4204	1.909E-02	.3899	5.261E-03

Group 44,  
7636  
MD

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GROUP 44

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9/26/73

NASA-RI STS OHAC

VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(P5IA) TO(LEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 44 10 ORBITER R7 8.00 858.1 1332 29.99 .01 -30.00 180.00 .00

T-1AF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF STREF  
 (U/G H) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.0175FI) (M=.0175FT)  
 9-5 .088 3.937 3852 7.639E-05 7.772E-08 3.785E 06 4.894E-02 2.091E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCK) TBAR(TO) BETA(TO)

104(T) 7636  
 SIDE(S) 6464 550 85 .0542 0 0

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
4102(550)	.03	MODEL HAS NOT REACHED CENTERLINE	6.762E-02	1.3809	6.278E-02	1.2819	1.741E-02	
4103(550)	.05	MODEL HAS NOT REACHED CENTERLINE	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02	
4104(550)	1.10	MODEL HAS NOT REACHED CENTERLINE	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02	
4105(550)	1.13	MODEL HAS NOT REACHED CENTERLINE	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02	
4106(550)	2.15	MODEL HAS NOT REACHED CENTERLINE	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02	
4107(550)	2.18	MODEL HAS NOT REACHED CENTERLINE	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02	
4108(550)	2.43	MODEL HAS NOT REACHED CENTERLINE	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02	
4109(550)	3.25	4.209E-02	.8595	6.762E-02	1.3809	6.278E-02	1.2819	1.741E-02
4110(550)	3.25	4.209E-02	.8595	6.762E-02	1.3809	6.278E-02	1.2819	1.741E-02
4111(550)	4.33	3.360E-02	.6860	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02
4112(550)	4.33	3.360E-02	.6860	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02
4113(550)	4.33	3.360E-02	.6860	5.398E-02	1.1021	5.012E-02	1.0232	1.390E-02
4114(550)	4.02	2.887E-02	.5896	4.639E-02	.9472	4.306E-02	.8794	1.194E-02
4115(550)	5.41	2.878E-02	.5878	4.624E-02	.9444	4.293E-02	.8768	1.191E-02
4116(550)	5.09	2.564E-02	.5236	4.120E-02	.8413	3.825E-02	.7810	1.061E-02
4117(550)	6.46	2.558E-02	.5224	4.110E-02	.8393	3.815E-02	.7792	1.059E-02
4118(550)	6.48	2.330E-02	.4757	3.743E-02	.7642	3.475E-02	.7095	9.636E-03
4119(550)	7.53	2.330E-02	.4757	3.743E-02	.7642	3.475E-02	.7095	9.636E-03
4120(550)	7.26	2.330E-02	.4757	3.743E-02	.7642	3.475E-02	.7095	9.636E-03
4121(550)	8.61	2.150E-02	.4389	3.454E-02	.7052	3.207E-02	.6547	8.891E-03
4122(550)	8.63	2.150E-02	.4389	3.454E-02	.7052	3.207E-02	.6547	8.891E-03
4123(550)	9.69	2.146E-02	.4382	3.448E-02	.7040	3.201E-02	.6535	8.876E-03
4124(550)	9.32	2.006E-02	.4095	3.223E-02	.6579	2.992E-02	.6109	8.295E-03
4125(550)	8.32	2.003E-02	.4089	3.218E-02	.6570	2.988E-02	.6099	8.283E-03
4126(550)	9.71	1.888E-02	.3854	3.033E-02	.6192	2.816E-02	.5748	7.807E-03
4127(550)	10.76	1.888E-02	.3854	3.033E-02	.6192	2.816E-02	.5748	7.807E-03
4128(550)	10.79	1.888E-02	.3854	3.033E-02	.6192	2.816E-02	.5748	7.807E-03
4129(550)	10.48	1.788E-02	.3650	2.873E-02	.5864	2.667E-02	.5444	7.393E-03
4130(550)	11.44	1.788E-02	.3650	2.873E-02	.5864	2.667E-02	.5444	7.393E-03
4131(550)	10.50	1.788E-02	.3650	2.873E-02	.5864	2.667E-02	.5444	7.393E-03
4132(550)	11.46	1.788E-02	.3650	2.873E-02	.5864	2.667E-02	.5444	7.393E-03
4133(550)	11.55	1.703E-02	.3476	2.736E-02	.5585	2.540E-02	.5185	7.042E-03

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 9/26/73

NASA-HI STS OH4C  
 VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
44	10	URITER R7	8.00	859.3	1333	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MREF	SREF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(R= .0175FT)		
96.6	.088	3.943	3852	7.646E-05	7.776E-08	3.788E 06	4.898E-02	2.090E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE HOOT (RHOCXK)	TBAR(TO)	BETA(TO)				
TOP(T)	7636									
SIDE(S)	6964	550	85	.0542	5.903E-01	1.0678E 00				

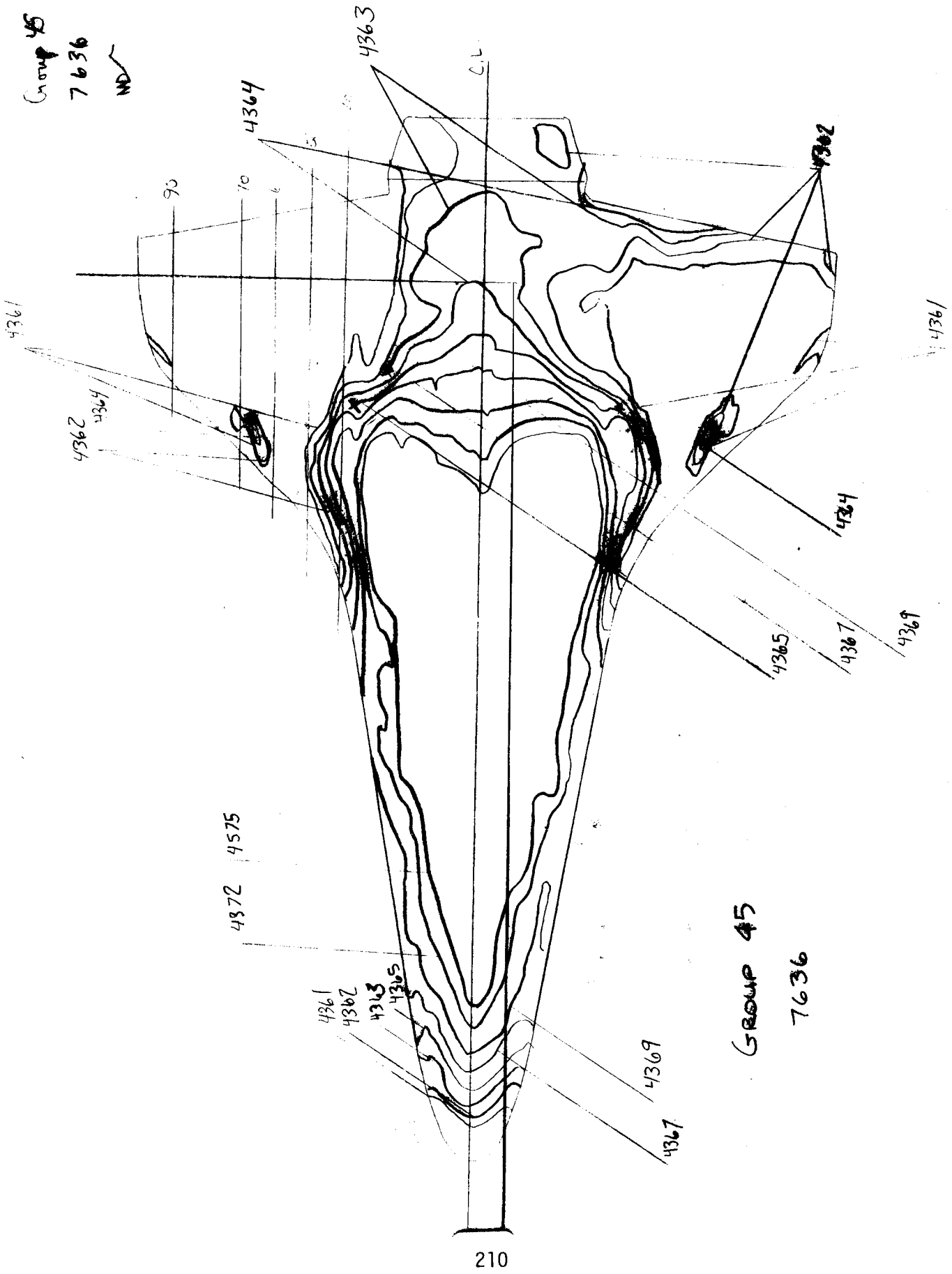
  

PIC NO	TIME DELTIME	H(TO)	M(TO)/MREF	H(.910)	M(.910)/MREF	H(.912TO)	M(.912TO)/MREF	ST(TO)
1	4347(550) 12.54	1.701E-02	.3472	2.733E-02	.5579	2.537E-02	.5179	7.034E-03
2	4113(550) 13.59	1.629E-02	.3326	2.617E-02	.5343	2.429E-02	.4961	6.739E-03
3	4348(550) 14.62	1.627E-02	.3322	2.614E-02	.5338	2.427E-02	.4955	6.732E-03
4	4116(550) 15.07	1.563E-02	.3191	2.512E-02	.5127	2.332E-02	.4760	6.464E-03
5	4349(550) 15.09	1.562E-02	.3188	2.510E-02	.5122	2.330E-02	.4756	6.458E-03
6	4117(550) 16.14	1.505E-02	.3072	2.419E-02	.4936	2.245E-02	.4583	6.223E-03
7	4350(550) 16.17	1.504E-02	.3070	2.417E-02	.4933	2.243E-02	.4579	6.218E-03
8	4118(550) 17.22	1.453E-02	.2968	2.333E-02	.4769	2.168E-02	.4427	6.015E-03
9	4351(550) 17.24	1.452E-02	.2966	2.333E-02	.4765	2.166E-02	.4423	6.009E-03
10	4119(550) 18.30	1.406E-02	.2872	2.260E-02	.4615	2.098E-02	.4284	5.821E-03
11	4352(550) 18.32	1.405E-02	.2870	2.258E-02	.4611	2.096E-02	.4281	5.817E-03
MODEL HAS LEFT CENTERLINE								
12	4120(550) 19.37	1.364E-02	.2786	2.191E-02	.4475	2.034E-02	.4155	5.646E-03
13	4353(550) 19.40	1.363E-02	.2783	2.190E-02	.4472	2.033E-02	.4152	5.641E-03
14	4121(550) 20.45	1.325E-02	.2704	2.128E-02	.4344	1.976E-02	.4033	5.477E-03
15	4354(550) 20.47	1.324E-02	.2702	2.127E-02	.4340	1.975E-02	.4029	5.471E-03
16	4122(550) 21.52	1.269E-02	.2630	2.071E-02	.4226	1.923E-02	.3923	5.328E-03
17	4355(550) 21.55	1.268E-02	.2629	2.070E-02	.4224	1.921E-02	.3921	5.324E-03
18	4123(550) 22.60	1.256E-02	.2563	2.018E-02	.4118	1.873E-02	.3823	5.192E-03
19	4356(550) 22.63	1.255E-02	.2562	2.017E-02	.4116	1.872E-02	.3821	5.188E-03

Group 45

7636

WD



Group 45

7636

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 9/26/73

NASA-RI STS OHAC  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
45	4	ORBITER R1	8.00	857.6	1335	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(LB-SEC/FT <sup>2</sup> )	(FT-1)	(R=)	(R=)	(R=)		
96.2	.098	3.935	3856	7.616E-05	7.790E-08	3.770E 06	4.895E-02	2.094E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RMOXCK)	TBAR(TO)	BETA(TO)				
TOP(T)										
SIDE(TS)										
			300		84		.0544		0	0

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 4357(300)	.05	MODEL HAS NOT REACHED CENTERLINE						
5 4124(300)	.05	MODEL HAS NOT REACHED CENTERLINE						
5 4125(300)	1.10	MODEL HAS NOT REACHED CENTERLINE						
1 4358(300)	1.13	MODEL HAS NOT REACHED CENTERLINE						
5 4126(300)	2.18	MODEL HAS NOT REACHED CENTERLINE						
1 4359(300)	2.20	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.45								
5 4127(300)	3.25	1.235E-02	.2522	1.582E-02	.3231	1.529E-02	.3122	5.185E-03
1 4360(300)	3.28	1.227E-02	.2506	1.572E-02	.3210	1.519E-02	.3102	5.152E-03
5 4128(300)	4.33	9.846E-03	.2011	1.262E-02	.2576	1.219E-02	.2489	4.135E-03
1 4361(300)	4.36	9.805E-03	.2002	1.256E-02	.2566	1.214E-02	.2479	4.118E-03
5 4362(300)	5.41	8.429E-03	.1721	1.080E-02	.2205	1.044E-02	.2131	3.539E-03
1 4363(300)	5.41	8.429E-03	.1721	1.080E-02	.2205	1.044E-02	.2131	3.539E-03
5 4129(300)	5.41	8.429E-03	.1721	1.080E-02	.2205	1.044E-02	.2131	3.539E-03
1 4364(300)	6.48	7.488E-03	.1529	9.595E-03	.1959	9.271E-03	.1893	3.143E-03
5 4130(300)	6.51	7.470E-03	.1525	9.571E-03	.1954	9.248E-03	.1888	3.136E-03
1 4365(300)	7.56	6.805E-03	.1389	8.719E-03	.1780	8.425E-03	.1720	2.856E-03
5 4131(300)	7.56	6.805E-03	.1389	8.719E-03	.1780	8.425E-03	.1720	2.856E-03
1 4366(300)	8.63	6.280E-03	.1283	8.047E-03	.1644	7.775E-03	.1588	2.639E-03
5 4132(300)	8.63	6.280E-03	.1283	8.047E-03	.1644	7.775E-03	.1588	2.639E-03
1 4367(300)	9.71	5.851E-03	.1196	7.509E-03	.1533	7.256E-03	.1481	2.459E-03
5 4133(300)	9.71	5.851E-03	.1196	7.509E-03	.1533	7.256E-03	.1481	2.459E-03
1 4368(300)	9.74	5.852E-03	.1195	7.498E-03	.1531	7.245E-03	.1479	2.456E-03
5 4134(300)	10.79	5.516E-03	.1126	7.067E-03	.1443	6.829E-03	.1394	2.315E-03
1 4369(300)	10.79	5.516E-03	.1126	7.067E-03	.1443	6.829E-03	.1394	2.315E-03
5 4135(300)	11.84	5.231E-03	.1068	6.703E-03	.1369	6.476E-03	.1322	2.196E-03
1 4370(300)	11.89	5.219E-03	.1066	6.687E-03	.1365	6.461E-03	.1319	2.191E-03
5 4136(300)	12.94	4.976E-03	.1016	6.375E-03	.1301	6.160E-03	.1257	2.088E-03
1 4371(300)	12.94	4.976E-03	.1016	6.375E-03	.1301	6.160E-03	.1257	2.088E-03

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NASA-R1 STS 0M4C  
 VA352

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

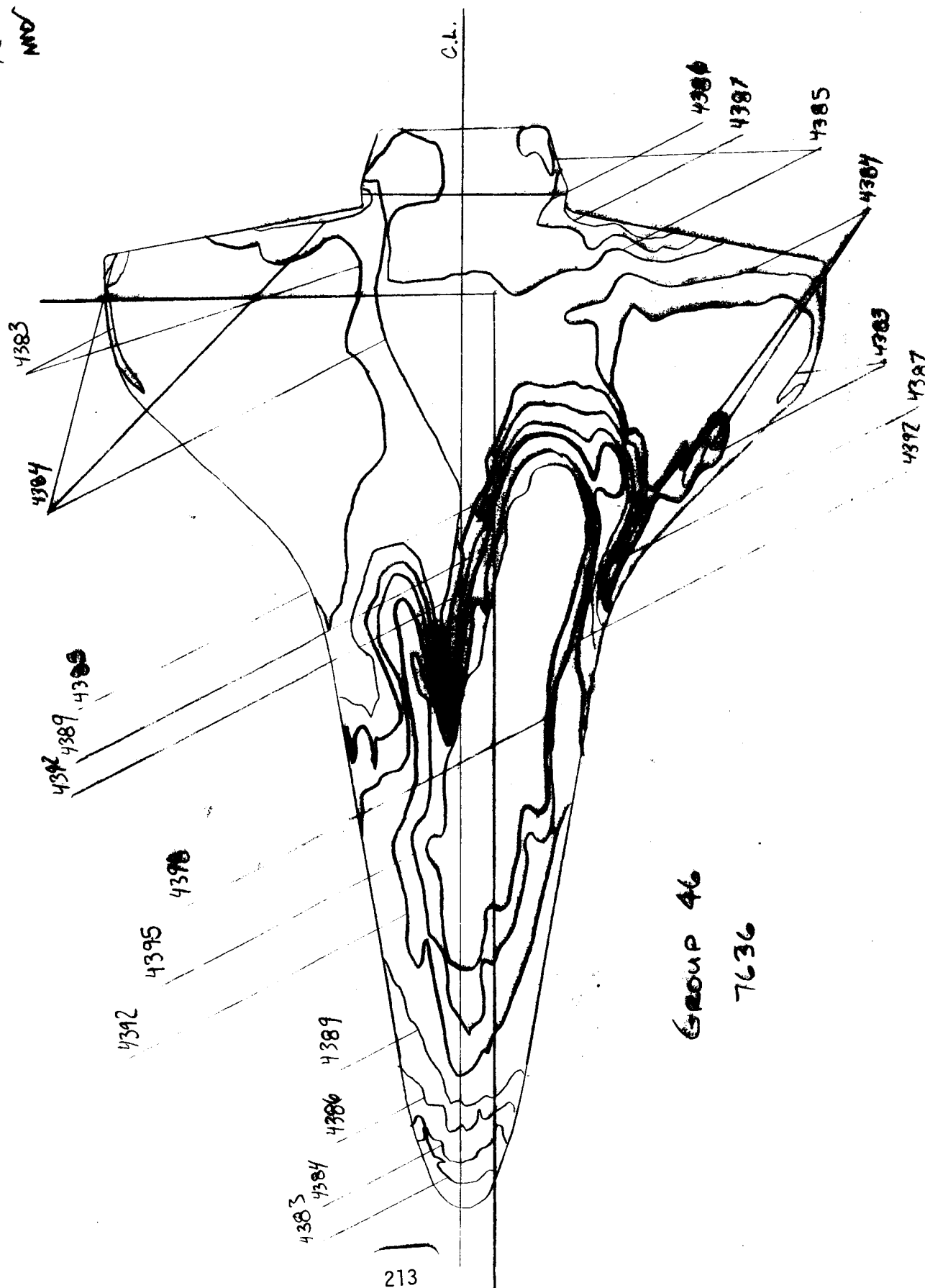
GROUP CONFIG MODEL MACH NO PO(PSIA) TO( DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 45 4 ORBITER H1 8.00 859.0 1335 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF SIREF  
 (DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .0175FT) (R= .0175FT)  
 95.2 .088 3.942 3856 7.629E-05 7.790E-08 3.776E 06 4.899E-02 2.093E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCK) TBAR(TO) BETA(TO)  
 10-1T 7636  
 SIDE(S) 6964 300 84 .0544 2.729E-01 3.1102E-01

PIC NO	TIME DELTIVE	H(TO)	HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(10)
1 4137(300)	13.59	4.764E-03	.0973	6.104E-03	.1246	5.898E-03	.1204	2.000E-03
1 4370(300)	14.02	4.759E-03	.0972	6.098E-03	.1245	5.892E-03	.1203	1.998E-03
1 4371(300)	15.09	4.569E-03	.0933	5.854E-03	.1195	5.656E-03	.1155	1.917E-03
1 4138(300)	15.09	4.569E-03	.0933	5.854E-03	.1195	5.656E-03	.1155	1.917E-03
1 4372(300)	16.17	4.399E-03	.0898	5.637E-03	.1150	5.447E-03	.1112	1.845E-03
1 4139(300)	16.17	4.399E-03	.0898	5.637E-03	.1150	5.447E-03	.1112	1.845E-03
1 4373(300)	17.24	4.247E-03	.0867	5.442E-03	.1111	5.259E-03	.1073	1.782E-03
1 4140(300)	17.24	4.247E-03	.0867	5.442E-03	.1111	5.259E-03	.1073	1.782E-03
1 4374(300)	18.32	4.110E-03	.0839	5.267E-03	.1075	5.089E-03	.1039	1.725E-03
1 4141(300)	18.32	4.110E-03	.0839	5.267E-03	.1075	5.089E-03	.1039	1.725E-03
1 4375(300)	19.40	3.946E-03	.0813	5.107E-03	.1042	4.935E-03	.1007	1.672E-03
1 4142(300)	19.40	3.946E-03	.0813	5.107E-03	.1042	4.935E-03	.1007	1.672E-03
MODEL HAS LEFT CENTERLINE								
1 4376(300)	20.45	3.872E-03	.0790	4.961E-03	.1012	4.794E-03	.0978	1.624E-03
1 4143(300)	20.47	3.872E-03	.0790	4.961E-03	.1012	4.794E-03	.0978	1.624E-03
1 4377(300)	21.55	3.767E-03	.0769	4.827E-03	.0985	4.664E-03	.0952	1.580E-03
1 4144(300)	21.55	3.767E-03	.0769	4.827E-03	.0985	4.664E-03	.0952	1.580E-03
1 4378(300)	22.63	3.670E-03	.0749	4.703E-03	.0960	4.544E-03	.0927	1.540E-03
1 4145(300)	22.63	3.670E-03	.0749	4.703E-03	.0960	4.544E-03	.0927	1.540E-03
1 4379(300)	23.70	3.581E-03	.0731	4.588E-03	.0936	4.433E-03	.0905	1.502E-03
1 4146(300)	23.70	3.581E-03	.0731	4.588E-03	.0936	4.433E-03	.0905	1.502E-03

Group 46  
7636  
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Group 46  
7636

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NASA-RI STS OH4C

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP	CONFIG	MODEL	MACH NO	PO(PISA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
46	5	GREITER R2	8.00	857.9	1335	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(H= .0175FT)		
9.57	3.088	3.937	3856	7.620E-05	7.789E-08	3.772E 06	4.895E-02	2.094E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCK)	TBAR(TO)	BETA(TO)				
10P17	7636	300	85	.0544	0	0				
SIZE(S)	6564									

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3.23	1.85	.2531	1.587E-02	.3242	1.534E-02	.3133	5.205E-03
2	3.25	1.88	.2514	1.577E-02	.3221	1.523E-02	.3112	5.171E-03
3	4.30	2.93	.2012	1.262E-02	.2577	1.220E-02	.2490	4.136E-03
4	4.33	2.95	.2003	1.257E-02	.2566	1.214E-02	.2480	4.118E-03
5	5.38	4.00	.1721	1.079E-02	.2204	1.043E-02	.2130	3.538E-03
6	5.41	4.03	.1715	1.076E-02	.2197	1.040E-02	.2123	3.527E-03
7	6.46	5.08	.1527	9.582E-03	.1957	9.259E-03	.1891	3.141E-03
8	6.48	5.11	.1524	9.559E-03	.1952	9.236E-03	.1886	3.133E-03
9	7.53	6.16	.1388	8.705E-03	.1778	8.411E-03	.1718	2.853E-03
10	7.56	6.18	.1385	8.687E-03	.1774	8.394E-03	.1714	2.847E-03
11	8.61	7.23	.1280	8.031E-03	.1641	7.760E-03	.1585	2.634E-03
12	8.63	7.26	.1278	8.017E-03	.1638	7.747E-03	.1582	2.629E-03
13	9.69	8.31	.1195	7.493E-03	.1531	7.240E-03	.1479	2.457E-03
14	9.71	8.33	.1193	7.481E-03	.1528	7.229E-03	.1477	2.453E-03
15	10.79	9.41	.1122	7.041E-03	.1437	6.803E-03	.1389	2.306E-03
16	10.79	9.41	.1122	7.041E-03	.1437	6.803E-03	.1389	2.306E-03
17	10.79	9.41	.1122	7.041E-03	.1437	6.803E-03	.1389	2.306E-03
18	11.84	10.46	.1064	6.678E-03	.1363	6.452E-03	.1317	2.188E-03
19	11.86	10.49	.1063	6.670E-03	.1362	6.445E-03	.1316	2.185E-03
20	12.91	11.54	.1013	6.358E-03	.1298	6.144E-03	.1254	2.083E-03

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9/26/73

NASA-RI STS 0H4C

VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

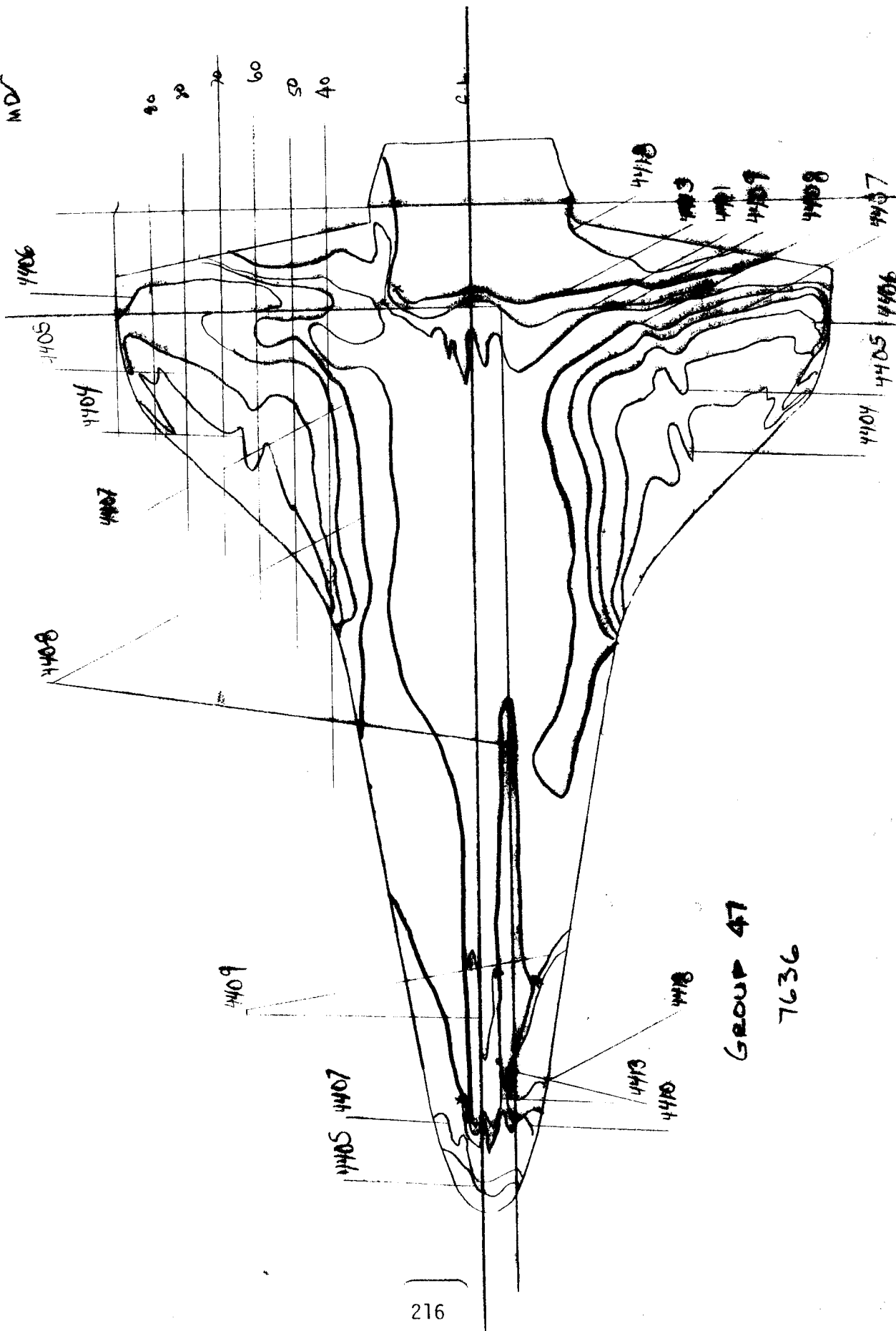
GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
46	5	ORBITER R2	8.00	858.7	1335	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MREF	SIREF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(M= .0175FT)		
96.8	.088	3.940	3856	7.627E-05	7.789E-08	3.775E 06	4.898E-02	2.093E-02		
CAMERA	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUXCAK)	TBAR(10)	BETA(10)				
LOP(T)	7636									
SIDE(S)	6964									
			300		85	.0544			2.721E-01	3.0988E-01

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(.910)	M(.910)/HREF	M(.91210)	H(.91210)/HREF	SI(10)	
I 4392(300)	12.54	4.957E-03	.1012	6.352E-03	.1297	6.137E-03	.1253	2.081E-03	
I 4393(300)	14.02	4.742E-03	.0968	6.075E-03	.1240	5.870E-03	.1198	1.990E-03	
S 4160(300)	14.02	4.742E-03	.0968	6.075E-03	.1240	5.870E-03	.1198	1.990E-03	
I 4394(300)	15.09	4.552E-03	.0930	5.832E-03	.1191	5.635E-03	.1151	1.913E-03	
S 4161(300)	15.09	4.552E-03	.0930	5.832E-03	.1191	5.635E-03	.1151	1.913E-03	
I 4395(300)	16.17	4.383E-03	.0895	5.616E-03	.1147	5.426E-03	.1108	1.840E-03	
S 4162(300)	16.17	4.383E-03	.0895	5.616E-03	.1147	5.426E-03	.1108	1.840E-03	
I 4396(300)	17.24	4.232E-03	.0864	5.422E-03	.1107	5.239E-03	.1070	1.776E-03	
S 4163(300)	17.24	4.232E-03	.0864	5.422E-03	.1107	5.239E-03	.1070	1.776E-03	
I 4397(300)	18.32	4.095E-03	.0836	5.247E-03	.1071	5.070E-03	.1035	1.718E-03	
S 4164(300)	18.32	4.095E-03	.0836	5.247E-03	.1071	5.070E-03	.1035	1.718E-03	
I 4398(300)	19.40	3.971E-03	.0810	5.088E-03	.1038	4.916E-03	.1003	1.666E-03	
S 4165(300)	19.40	3.971E-03	.0810	5.088E-03	.1038	4.916E-03	.1003	1.666E-03	
		MODEL HAS LEFT CENTERLINE							
I 4399(300)	20.47	3.858E-03	.0788	4.942E-03	.1009	4.776E-03	.0975	1.619E-03	
S 4166(300)	20.47	3.858E-03	.0788	4.942E-03	.1009	4.776E-03	.0975	1.619E-03	



Group 47  
7636  
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GROUP 47  
7636

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NASA-RI STS 0H4C  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PISA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
47	10	UNBITTER R7	8.00	857.1	1334	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	STREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R=)	(R=)	(R=)		
96.7	.088	3.933	3855	7.617E-05	7.785E-08	3.772E 06	4.893E-02	2.094E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCXK)	TBAR(10)	BETA(10)				
10P(1)	7636		86	.0555	0	0				
S1UE(S)	6964	400								

PIC NO	TIME DELTINE	M(10)	H(10)/HREF	M(.910)	M(.910)/HREF	M(.91210)	M(.91210)/HREF	ST(10)
I 4400(400)	.03	MODEL HAS NOT REACHED CENTERLINE						
S 4167(400)	.03	MODEL HAS NOT REACHED CENTERLINE						
S 4168(400)	1.08	MODEL HAS NOT REACHED CENTERLINE						
I 4401(400)	1.10	MODEL HAS NOT REACHED CENTERLINE						
S 4169(400)	2.15	MODEL HAS NOT REACHED CENTERLINE						
I 4402(400)	2.18	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =	2.43							
S 4170(400)	3.23	2.144E-02	.4382	2.900E-02	.5926	2.779E-02	.5676	8.963E-03
I 4403(400)	3.25	2.130E-02	.4353	2.881E-02	.5887	2.760E-02	.5639	8.904E-03
S 4171(400)	4.30	1.708E-02	.3490	2.310E-02	.4720	2.212E-02	.4521	7.139E-03
I 4404(400)	4.33	1.701E-02	.3475	2.305E-02	.4700	2.203E-02	.4501	7.108E-03
S 4172(400)	4.02	1.461E-02	.2986	1.976E-02	.4038	1.893E-02	.3868	6.108E-03
I 4405(400)	5.38	1.401E-02	.2652	1.755E-02	.3577	1.681E-02	.3436	6.108E-03
S 4173(400)	6.46	1.298E-02	.2652	1.755E-02	.3577	1.681E-02	.3436	5.425E-03
I 4406(400)	6.48	1.295E-02	.2646	1.751E-02	.3578	1.677E-02	.3427	5.412E-03
S 4174(400)	7.53	1.179E-02	.2410	1.595E-02	.3259	1.528E-02	.3122	4.931E-03
I 4407(400)	7.56	1.177E-02	.2405	1.592E-02	.3252	1.524E-02	.3115	4.919E-03
S 4175(400)	8.61	1.088E-02	.2224	1.472E-02	.3007	1.410E-02	.2880	4.549E-03
I 4408(400)	9.63	1.006E-02	.2220	1.469E-02	.3002	1.407E-02	.2875	4.541E-03
S 4176(400)	9.69	1.015E-02	.2075	1.371E-02	.2806	1.315E-02	.2688	4.245E-03
I 4409(400)	9.71	1.014E-02	.2071	1.371E-02	.2801	1.313E-02	.2683	4.236E-03
S 4177(400)	10.76	9.554E-03	.1952	1.292E-02	.2640	1.238E-02	.2529	3.993E-03
I 4410(400)	10.79	9.541E-03	.1949	1.290E-02	.2636	1.236E-02	.2525	3.986E-03
S 4178(400)	11.64	9.050E-03	.1849	1.224E-02	.2500	1.178E-02	.2395	3.780E-03
I 4411(400)	11.86	9.039E-03	.1846	1.223E-02	.2497	1.171E-02	.2392	3.776E-03
S 4179(400)	12.91	8.618E-03	.1760	1.166E-02	.2381	1.116E-02	.2281	3.606E-03

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NASA-HI STS OM4C

VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 47 10 ORBITER R7 8.00 858.1 1334 29.99 .01 -30.00 180.00 .00  
 T-INF P-INF Q-INF V-INF MU-INF RE/FT HREF SIREF  
 (DEG R) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.0175FT) (M=.0175FT)  
 96.7 .088 3.937 3855 7.625E-05 7.785E-08 3.776E 06 4.895E-02 2.093E-02  
 CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHQACXK) TBAH(TO) BETA(TO)  
 IOP(T) 7636  
 SIDE(S) 6564 400 86 .0555 3.983E-01 5.277E-01

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	SI(TO)
I 4412(400)	12.94	11.58	8.609E-03	1.164E-02	1.115E-02	.2378	1.115E-02	3.596E-03
S 4180(400)	13.59	12.63	8.243E-03	1.115E-02	1.088E-02	.2277	1.088E-02	3.444E-03
I 4413(400)	14.02	12.65	8.235E-03	1.114E-02	1.067E-02	.2275	1.067E-02	3.440E-03
S 4181(400)	15.07	13.70	7.912E-03	1.070E-02	1.025E-02	.2186	1.025E-02	3.306E-03
I 4414(400)	15.09	13.73	7.935E-03	1.069E-02	1.024E-02	.2184	1.024E-02	3.303E-03
I 4415(400)	16.17	14.81	7.612E-03	1.030E-02	9.862E-03	.2104	9.862E-03	3.182E-03
S 4182(400)	16.17	14.81	7.612E-03	1.030E-02	9.862E-03	.2104	9.862E-03	3.182E-03
I 4416(400)	17.24	15.88	7.350E-03	9.941E-03	9.522E-03	.2031	9.522E-03	3.071E-03
S 4183(400)	17.24	15.88	7.350E-03	9.941E-03	9.522E-03	.2031	9.522E-03	3.071E-03
I 4417(400)	18.32	16.96	7.113E-03	9.620E-03	9.214E-03	.1966	9.214E-03	2.974E-03
S 4184(400)	18.32	16.96	7.113E-03	9.620E-03	9.214E-03	.1966	9.214E-03	2.974E-03
I 4418(400)	19.40	18.03	6.897E-03	9.329E-03	8.935E-03	.1905	8.935E-03	2.881E-03
S 4185(400)	19.40	18.03	6.897E-03	9.329E-03	8.935E-03	.1905	8.935E-03	2.881E-03
MODEL HAS LEFT CENTERLINE								
I 4419(400)	20.25	19.11	6.700E-03	9.022E-03	8.680E-03	.1851	8.680E-03	2.800E-03
S 4186(400)	20.47	19.11	6.700E-03	9.022E-03	8.680E-03	.1851	8.680E-03	2.800E-03
I 4420(400)	21.55	20.19	6.519E-03	8.817E-03	8.445E-03	.1801	8.445E-03	2.722E-03
S 4187(400)	21.55	20.19	6.519E-03	8.817E-03	8.445E-03	.1801	8.445E-03	2.722E-03

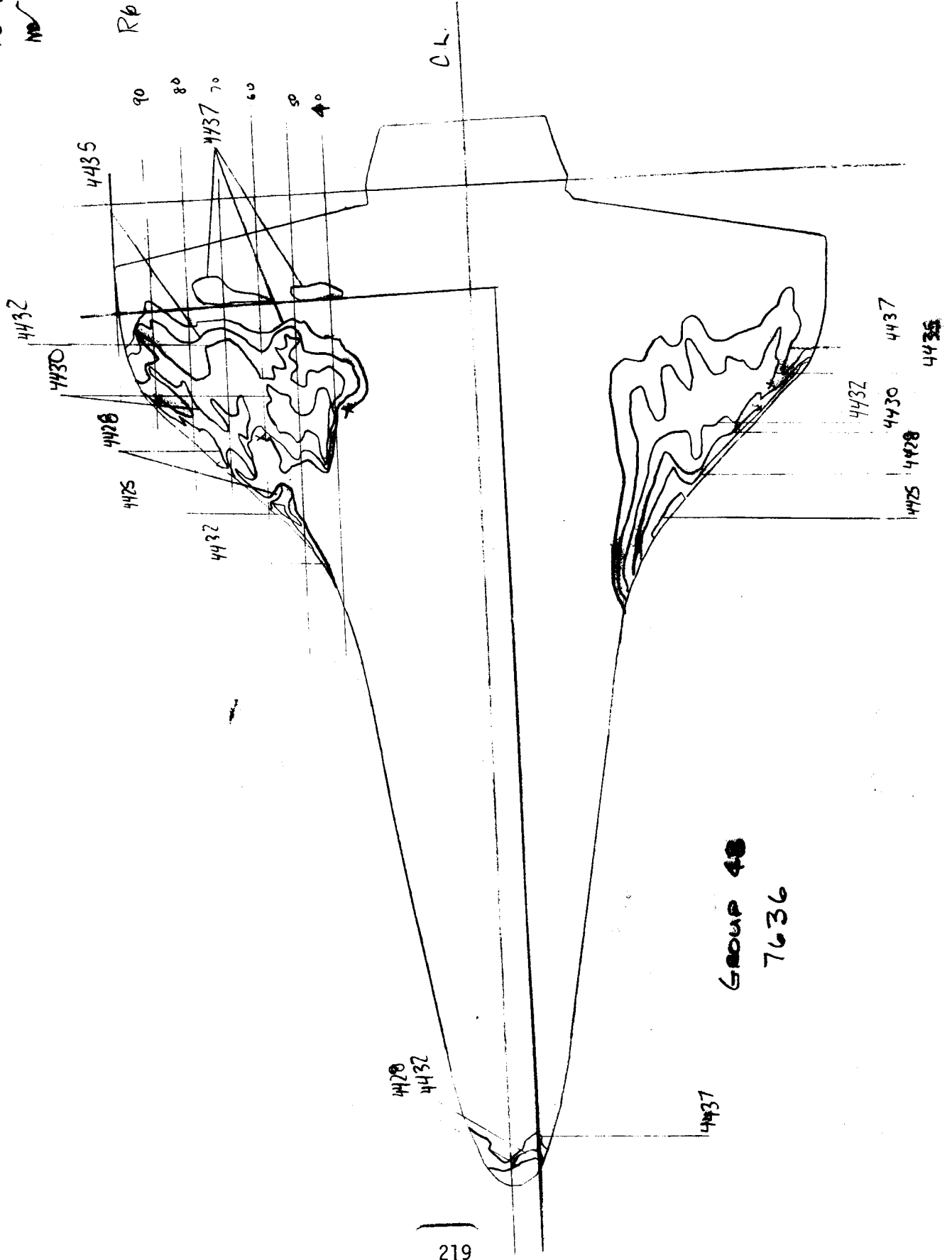
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Group 48

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9/26/73

NASA-RI STS OHAC

VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 48 9 ORBITER R6 8.00 860.4 1339 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF MU-INF RE/FT HREF S(HREF)  
 (DEG H) (PSIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LB-SEC/FT<sup>2</sup>) (FT-1) (H= .0175FT) (H= .0175FT)  
 97.0 .088 3.948 3861 7.623E-05 7.810E-08 3.769E 06 4.905E-02 2.094E-02

CAMERA HOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOCXCK) TBAR(TO) BETAT(TO)  
 10P(T) 7636 550 82 .0542 0 0  
 SIDE(S) 6564

PIC NO	TIME DELTIME	H(TO)	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(TO)
1 4421(550)	3.25	1.88	4.181E-02	.8523	6.663E-02	1.3580	6.196E-02	1.2628	1.729E-02
5 4188(550)	.05	1.88	4.181E-02	.8523	6.663E-02	1.3580	6.196E-02	1.2628	1.729E-02
5 4189(550)	1.10	2.95	3.334E-02	.6795	5.312E-02	1.0827	4.939E-02	1.0068	1.379E-02
5 4422(550)	1.13	2.95	3.334E-02	.6795	5.312E-02	1.0827	4.939E-02	1.0068	1.379E-02
5 4190(550)	2.18	4.03	2.854E-02	.5817	4.547E-02	.9269	4.228E-02	.8619	1.180E-02
5 4423(550)	2.20	4.03	2.854E-02	.5817	4.547E-02	.9269	4.228E-02	.8619	1.180E-02
5 4424(550)	2.45	5.11	2.535E-02	.5167	4.040E-02	.8233	3.756E-02	.7656	1.048E-02
5 4191(550)	3.25	1.88	4.181E-02	.8523	6.663E-02	1.3580	6.196E-02	1.2628	1.729E-02
5 4425(550)	4.33	2.95	3.334E-02	.6795	5.312E-02	1.0827	4.939E-02	1.0068	1.379E-02
5 4192(550)	4.33	2.95	3.334E-02	.6795	5.312E-02	1.0827	4.939E-02	1.0068	1.379E-02
5 4426(550)	8.61	7.23	2.130E-02	.4341	3.394E-02	.6917	3.156E-02	.6432	8.808E-03
5 4193(550)	8.63	7.23	2.130E-02	.4341	3.394E-02	.6917	3.156E-02	.6432	8.808E-03
5 4427(550)	8.63	7.23	2.130E-02	.4341	3.394E-02	.6917	3.156E-02	.6432	8.808E-03
5 4194(550)	9.71	8.33	1.944E-02	.4044	3.162E-02	.6444	2.940E-02	.5993	8.208E-03
5 4428(550)	10.76	9.39	1.870E-02	.3811	2.979E-02	.6073	2.771E-02	.5647	7.734E-03
5 4195(550)	10.79	9.41	1.867E-02	.3806	2.975E-02	.6065	2.767E-02	.5640	7.724E-03
5 4429(550)	11.84	10.46	1.771E-02	.3610	2.822E-02	.5753	2.624E-02	.5350	7.328E-03
5 4196(550)	11.86	10.49	1.769E-02	.3606	2.819E-02	.5746	2.621E-02	.5343	7.319E-03
5 4430(550)	12.54	11.56	1.685E-02	.3434	2.684E-02	.5471	2.496E-02	.5088	6.969E-03
5 4197(550)	12.54	11.56	1.685E-02	.3434	2.684E-02	.5471	2.496E-02	.5088	6.969E-03
5 4431(550)	12.54	11.56	1.685E-02	.3434	2.684E-02	.5471	2.496E-02	.5088	6.969E-03
5 4198(550)	12.54	11.56	1.685E-02	.3434	2.684E-02	.5471	2.496E-02	.5088	6.969E-03
5 4432(550)	12.54	11.56	1.685E-02	.3434	2.684E-02	.5471	2.496E-02	.5088	6.969E-03
5 4199(550)	12.54	11.56	1.685E-02	.3434	2.684E-02	.5471	2.496E-02	.5088	6.969E-03
5 4433(550)	12.54	11.56	1.685E-02	.3434	2.684E-02	.5471	2.496E-02	.5088	6.969E-03
5 4200(550)	12.54	11.56	1.685E-02	.3434	2.684E-02	.5471	2.496E-02	.5088	6.969E-03

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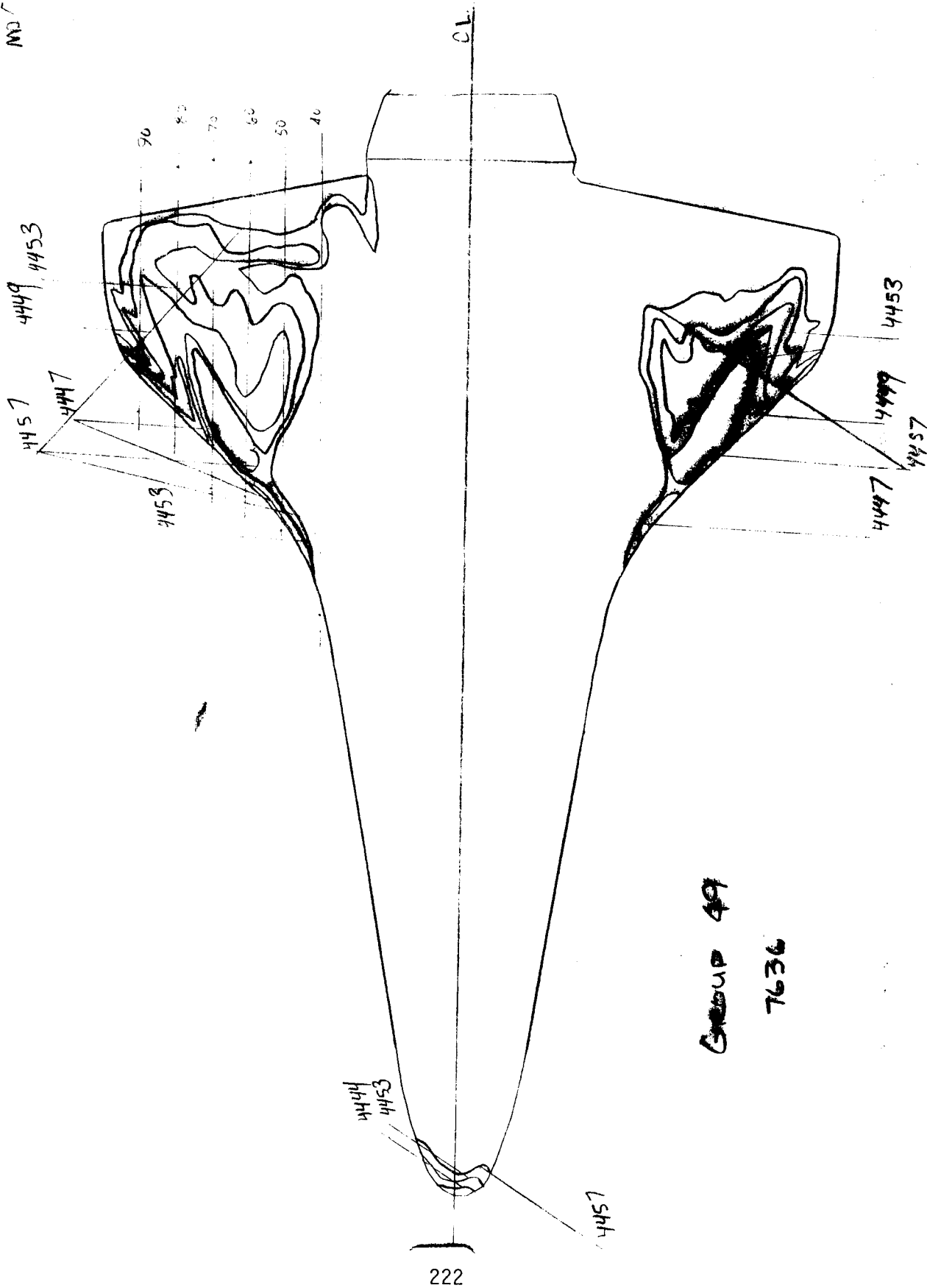
NASA-HI STS 0M4C  
 VA352

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL 8

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
48	9	OMITER R6	8.00	860.7	1339	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(R= .0175FT)		
97.0	-088	3.950	3861	7.625E-05	7.810E-08	3.770E 06	4.906E-02	2.094E-02		
CAMERA	ROLL NO	PAINT IEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUXCXK)	TBAR(TO)	BETA(TO)				
TOP(T)	7636									
SIDE(S)	6964									
			550		82	.0542			5.875E-01	1.0569E 00

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 4434(550)	14.02	1.611E-02	.3285	2.567E-02	.5234	2.387E-02	.4867	6.668E-03
5 4201(550)	14.02	1.611E-02	.3285	2.567E-02	.5234	2.387E-02	.4867	6.668E-03
1 4435(550)	15.09	1.547E-02	.3154	2.465E-02	.5025	2.292E-02	.4673	6.402E-03
5 4202(550)	15.09	1.547E-02	.3154	2.465E-02	.5025	2.292E-02	.4673	6.402E-03
1 4436(550)	16.17	1.489E-02	.3036	2.373E-02	.4837	2.207E-02	.4498	6.161E-03
5 4203(550)	16.17	1.489E-02	.3036	2.373E-02	.4837	2.207E-02	.4498	6.161E-03
1 4437(550)	17.24	1.438E-02	.2932	2.291E-02	.4673	2.131E-02	.4345	5.954E-03
5 4204(550)	17.24	1.438E-02	.2932	2.291E-02	.4673	2.131E-02	.4345	5.954E-03
1 4438(550)	18.32	1.392E-02	.2836	2.217E-02	.4519	2.062E-02	.4203	5.756E-03
5 4205(550)	18.32	1.392E-02	.2836	2.217E-02	.4519	2.062E-02	.4203	5.756E-03
		MODEL HAS LEFT CENTERLINE						
1 4439(550)	19.40	1.349E-02	.2751	2.150E-02	.4383	1.999E-02	.4076	5.582E-03
5 4206(550)	19.40	1.349E-02	.2751	2.150E-02	.4383	1.999E-02	.4076	5.582E-03

Group 49  
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9/26/73

NASA-RI STS OHAC

VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW  
 49 2 ORBITER S 8.00 858.3 1341 29.99 .01 -30.00 180.00 .00

T-INF Q-INF V-INF MU-INF RHO-INF RE/FT HREF SIREF  
 (DEG H) (PSIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LB-SEC/FT<sup>2</sup>) (FT-1) (R= .0175FT) (W= .0175FT)  
 97.1 .084 3.938 3864 7.592E-05 7.821E-08 3.750E 06 4.900E-02 2.099E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCKX) TBAR(TO) BETA(TO)  
 TOP(T) 7636  
 SIDE(S) 6964 550 82 .0542 0 0

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(-910)	H(-910)/HREF	H(-912TO)	H(-912TO)/HREF	ST(10)
1 4440(550)	3.25	4.144E-02	.8455	6.585E-02	1.3436	6.127E-02	1.2500	1.719E-02
2 4210(550)	3.25	4.144E-02	.8455	6.585E-02	1.3436	6.127E-02	1.2500	1.719E-02
3 4207(550)	4.33	3.308E-02	.6749	5.257E-02	1.0725	4.891E-02	.9978	1.372E-02
4 4441(550)	4.33	3.308E-02	.6749	5.257E-02	1.0725	4.891E-02	.9978	1.372E-02
5 4208(550)	1.10	3.308E-02	.6749	5.257E-02	1.0725	4.891E-02	.9978	1.372E-02
6 4442(550)	2.18	2.834E-02	.5781	4.503E-02	.9187	4.190E-02	.8548	1.176E-02
7 4212(550)	5.41	2.834E-02	.5781	4.503E-02	.9187	4.190E-02	.8548	1.176E-02
8 4446(550)	6.48	2.518E-02	.5138	4.002E-02	.8164	3.723E-02	.7596	1.045E-02
9 4213(550)	6.48	2.518E-02	.5138	4.002E-02	.8164	3.723E-02	.7596	1.045E-02
10 4447(550)	7.56	2.209E-02	.4670	3.638E-02	.7421	3.385E-02	.6904	9.496E-03
11 4214(550)	7.56	2.209E-02	.4670	3.638E-02	.7421	3.385E-02	.6904	9.496E-03
12 4215(550)	8.61	2.117E-02	.4317	3.364E-02	.6861	3.130E-02	.6383	8.777E-03
13 4448(550)	8.61	2.117E-02	.4317	3.364E-02	.6861	3.130E-02	.6383	8.777E-03
14 4216(550)	9.69	1.972E-02	.4028	3.139E-02	.6401	2.920E-02	.5956	8.176E-03
15 4449(550)	9.69	1.972E-02	.4028	3.139E-02	.6401	2.920E-02	.5956	8.176E-03
16 4450(550)	10.79	1.856E-02	.3786	2.950E-02	.6016	2.744E-02	.5597	7.696E-03
17 4217(550)	10.79	1.856E-02	.3786	2.950E-02	.6016	2.744E-02	.5597	7.696E-03
18 4218(550)	11.84	1.761E-02	.3592	2.798E-02	.5708	2.603E-02	.5311	7.306E-03
19 4451(550)	11.84	1.761E-02	.3592	2.798E-02	.5708	2.603E-02	.5311	7.306E-03
20 4219(550)	12.91	1.677E-02	.3420	2.664E-02	.5434	2.479E-02	.5056	6.952E-03
21 4452(550)	12.91	1.677E-02	.3420	2.664E-02	.5434	2.479E-02	.5056	6.952E-03

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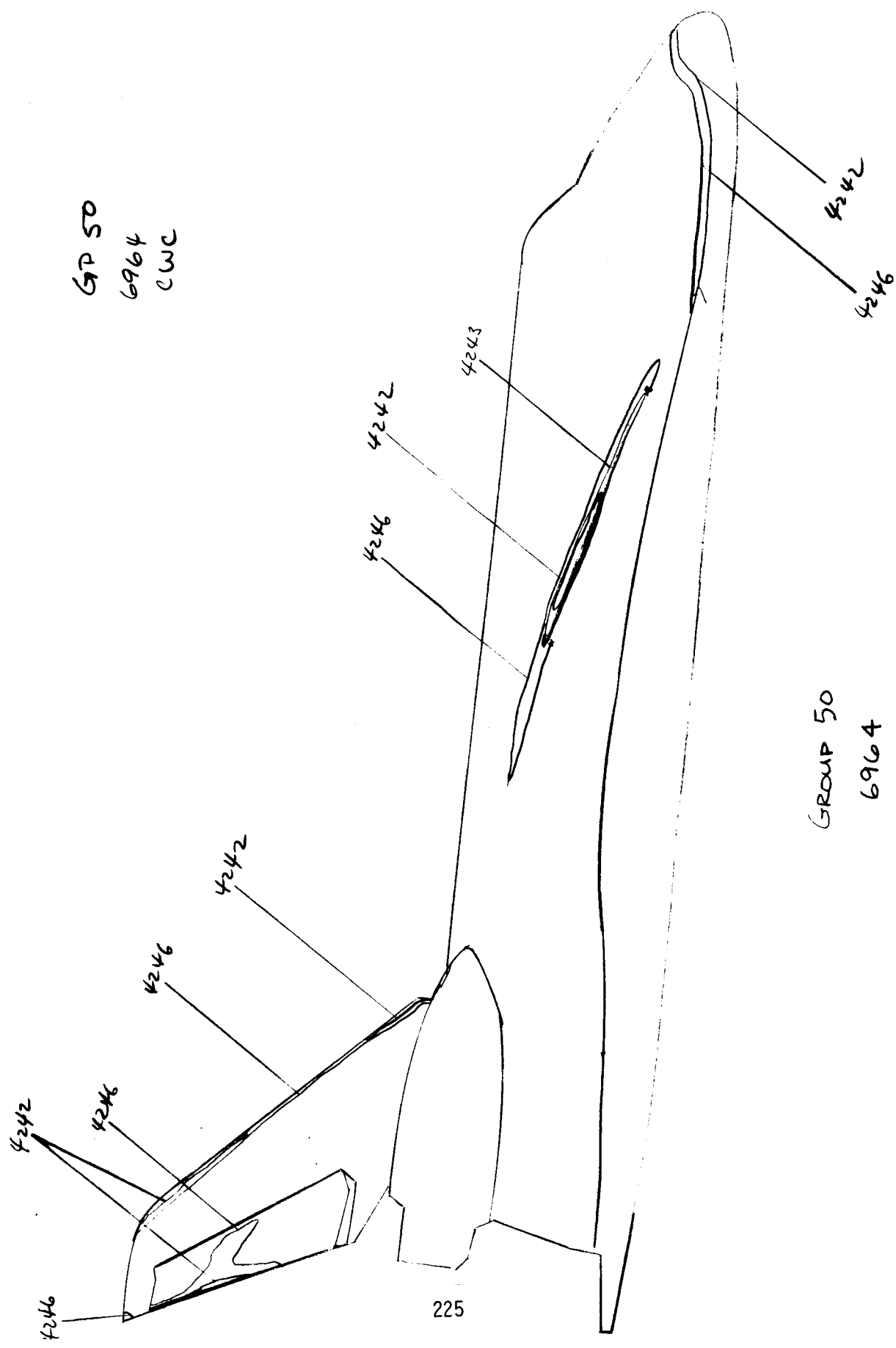
AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
49	2	ORBITER S	8.00	859.1	1340	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LH-SEC/FT2)	(FT-1)	(H= .0175FT)	(H= .0175FT)		
97.1	.088	3.942	3863	7.601E-05	7.820E-08	3.755E 06	4.902E-02	2.097E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHO/CAK)	TBAR(10)	BETA(10)				
IOP(IT)	7636									
SIDE(S)	6564									
			550	82				5.860E-01	1.0513E 00	
PIC NO	TIME DELT(SEC)	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)		
1 4452(550)	12.54	1.675E-02	.3416	2.661E-02	.5428	2.476E-02	.5050	6.944E-03		
1 4453(550)	14.02	1.602E-02	.3257	2.546E-02	.5192	2.368E-02	.4831	6.643E-03		
1 4454(550)	14.02	1.602E-02	.3257	2.546E-02	.5192	2.368E-02	.4831	6.643E-03		
1 4455(550)	15.07	1.539E-02	.3139	2.446E-02	.4988	2.276E-02	.4641	6.380E-03		
1 4456(550)	15.09	1.538E-02	.3136	2.444E-02	.4983	2.274E-02	.4636	6.374E-03		
1 4457(550)	16.17	1.481E-02	.3020	2.353E-02	.4800	2.189E-02	.4465	6.140E-03		
1 4458(550)	16.17	1.481E-02	.3020	2.353E-02	.4800	2.189E-02	.4465	6.140E-03		
1 4459(550)	17.24	1.430E-02	.2916	2.272E-02	.4634	2.114E-02	.4311	5.928E-03		
1 4460(550)	17.24	1.430E-02	.2916	2.272E-02	.4634	2.114E-02	.4311	5.928E-03		
1 4461(550)	18.30	1.365E-02	.2824	2.201E-02	.4488	2.047E-02	.4176	5.742E-03		
1 4462(550)	18.32	1.364E-02	.2822	2.199E-02	.4485	2.046E-02	.4172	5.737E-03		
1 4463(550)	19.40	1.342E-02	.2737	2.132E-02	.4349	1.984E-02	.4046	5.564E-03		
1 4464(550)	19.40	1.342E-02	.2737	2.132E-02	.4349	1.984E-02	.4046	5.564E-03		
1 4465(550)	20.47	1.303E-02	.2658	2.071E-02	.4225	1.927E-02	.3930	5.405E-03		
1 4466(550)	20.47	1.303E-02	.2658	2.071E-02	.4225	1.927E-02	.3930	5.405E-03		
1 4467(550)	21.55	1.268E-02	.2586	2.015E-02	.4109	1.875E-02	.3823	5.256E-03		
1 4468(550)	21.55	1.268E-02	.2586	2.015E-02	.4109	1.875E-02	.3823	5.256E-03		
1 4469(550)	22.63	1.236E-02	.2519	1.964E-02	.4004	1.827E-02	.3725	5.120E-03		
1 4470(550)	22.63	1.236E-02	.2519	1.964E-02	.4004	1.827E-02	.3725	5.120E-03		
1 4471(550)	23.70	1.206E-02	.2458	1.916E-02	.3906	1.782E-02	.3634	4.995E-03		
1 4472(550)	23.70	1.206E-02	.2457	1.915E-02	.3904	1.781E-02	.3632	4.992E-03		
1 4473(550)	23.73	1.205E-02	.2457	1.915E-02	.3904	1.781E-02	.3632	4.992E-03		

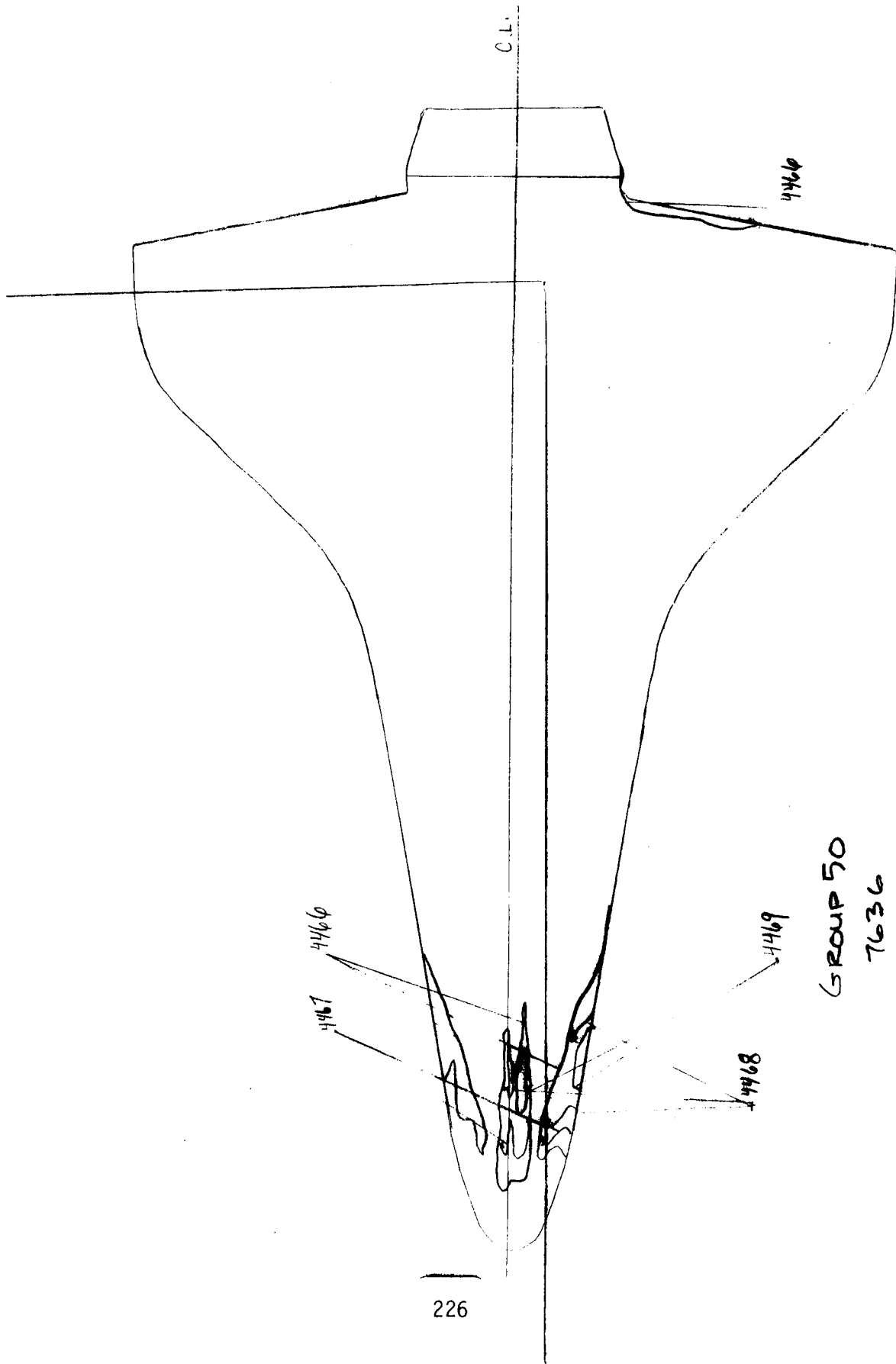
MODEL HAS LEFT CENTERLINE

GP 50  
6964  
CWC



GROUP 50  
6964

Group 50  
7636  
MD



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9/26/73

NASA-RI STS OH4C

VA352

AEDCI(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL 8

GROUP CONFIG MODEL MACH NO PO(PSTA) TO( DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 50 10 ORBITER F7 8.00 860.2 13.1 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF MU-INF RE/FT SIREF  
 (DEG R) (PSTA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LB-SEC/FT<sup>2</sup>) (FT-1) (R= .0175FI) (R= .0175FI)  
 97.2 .088 3.948 3865 7.605E-05 7.826E-08 3.756E 06 4.906E-02 2.097E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RH0XCXK) TBAR(TO) BEIA(TO)  
 10P(T) 7636  
 SIDE(S) 6564 250 89 .0535 0 0

PIC NO	TIME DELTIME	H(TO)	HREF	H(.910)	H(.910)/HREF	H(.912TO)	M(.912TO)/HREF	ST(TO)
1 4463(250)	.05	MODEL HAS NOT REACHED CENTERLINE						
5 4230(250)	.05	MODEL HAS NOT REACHED CENTERLINE						
5 4231(250)	1.10	MODEL HAS NOT REACHED CENTERLINE						
1 4464(250)	1.13	MODEL HAS NOT REACHED CENTERLINE						
5 4232(250)	2.18	MODEL HAS NOT REACHED CENTERLINE						
1 4465(250)	2.20	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.45								
1 4466(250)	3.25	8.412E-03	.1713	1.056E-02	.2152	1.024E-02	.2085	3.536E-03
5 4233(250)	3.25	8.412E-03	.1713	1.056E-02	.2152	1.024E-02	.2085	3.536E-03
5 4234(250)	4.33	6.706E-03	.1366	8.422E-03	.1715	8.162E-03	.1662	2.819E-03
1 4467(250)	4.36	6.678E-03	.1360	8.385E-03	.1708	8.127E-03	.1655	2.807E-03
1 4468(250)	5.41	5.741E-03	.1170	7.210E-03	.1469	6.987E-03	.1423	2.414E-03
5 4235(250)	5.41	5.741E-03	.1170	7.210E-03	.1469	6.987E-03	.1423	2.414E-03
1 4469(250)	6.48	5.100E-03	.1039	6.405E-03	.1305	6.207E-03	.1264	2.144E-03
5 4236(250)	6.48	5.100E-03	.1039	6.405E-03	.1305	6.207E-03	.1264	2.144E-03
5 4237(250)	7.56	4.635E-03	.0944	5.821E-03	.1186	5.641E-03	.1149	1.948E-03
1 4470(250)	7.56	4.635E-03	.0944	5.821E-03	.1186	5.641E-03	.1149	1.948E-03
1 4471(250)	8.63	4.278E-03	.0871	5.372E-03	.1094	5.206E-03	.1060	1.798E-03
5 4238(250)	8.63	4.278E-03	.0871	5.372E-03	.1094	5.206E-03	.1060	1.798E-03
1 4472(250)	9.71	3.942E-03	.0813	5.013E-03	.1021	4.858E-03	.0989	1.678E-03
5 4239(250)	9.71	3.942E-03	.0813	5.013E-03	.1021	4.858E-03	.0989	1.678E-03
5 4240(250)	10.79	3.757E-03	.0765	4.718E-03	.0961	4.572E-03	.0931	1.579E-03
1 4473(250)	10.81	3.757E-03	.0765	4.718E-03	.0961	4.572E-03	.0931	1.579E-03
5 4241(250)	11.86	3.559E-03	.0725	4.469E-03	.0910	4.331E-03	.0882	1.495E-03
1 4474(250)	11.89	3.559E-03	.0725	4.469E-03	.0910	4.331E-03	.0882	1.495E-03
5 4242(250)	12.94	3.389E-03	.0690	4.256E-03	.0867	4.125E-03	.0840	1.424E-03

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NASA-HI STS 044C

VA352

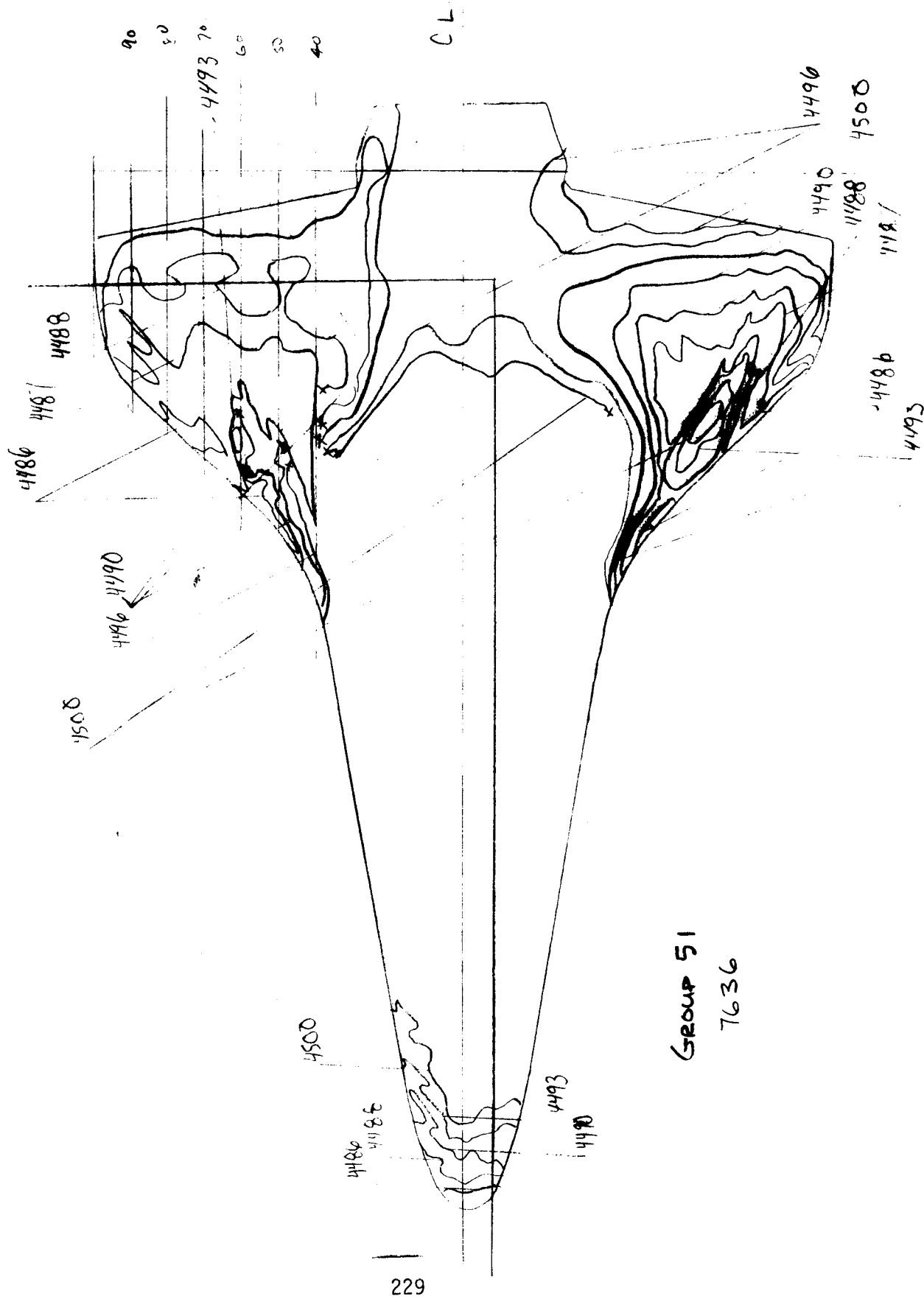
AEDC(AHO-INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(P/SIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
50	10	ORBITER R7	8.00	862.0	1341	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT <sup>3</sup> )	(LBS-SEC/FT <sup>2</sup> )	(FT-1)	(R= .0175FT)	(R= .0175FT)	(R= .0175FT)		
97.2	.088	3.956	3865	7.622E-05	7.825E-08	3.764E 06	4.911E-02	2.095E-02		
CAMERA	HOLL NO	PAINT IEMP (DEG F)	INITIAL IEMP (DEG F)	SQUARE ROOT (RHUACXK)	TBAR(TO)	BETA(TO)				
TOP(T)	7636		89	.0535	2.032E-01	2.1541E-01				
SIDE(S)	6964	250								

PIC NO	TIME DELTIME	H(TO)	HREF	H(-9TO)	HREF	H(-912TO)	HREF	ST(TO)
1 4475(250)	12.56	3.345E-03	.0689	4.251E-03	.0866	4.120E-03	.0839	1.422E-03
5 4243(250)	14.02	3.242E-03	.0660	4.071E-03	.0829	3.945E-03	.0803	1.362E-03
1 4476(250)	14.04	3.238E-03	.0659	4.076E-03	.0828	3.941E-03	.0802	1.360E-03
5 4244(250)	15.09	3.112E-03	.0634	3.908E-03	.0796	3.787E-03	.0771	1.307E-03
1 4477(250)	15.12	3.109E-03	.0633	3.904E-03	.0795	3.784E-03	.0770	1.306E-03
5 4245(250)	16.17	2.946E-03	.0610	3.763E-03	.0766	3.647E-03	.0742	1.258E-03
1 4478(250)	16.19	2.944E-03	.0610	3.760E-03	.0765	3.644E-03	.0742	1.257E-03
5 4246(250)	17.24	2.893E-03	.0589	3.633E-03	.0740	3.521E-03	.0717	1.215E-03
1 4479(250)	17.27	2.891E-03	.0588	3.630E-03	.0739	3.518E-03	.0716	1.214E-03
5 4247(250)	18.32	2.800E-03	.0570	3.516E-03	.0716	3.407E-03	.0694	1.175E-03
1 4480(250)	18.35	2.798E-03	.0569	3.513E-03	.0715	3.405E-03	.0693	1.175E-03
5 4248(250)	19.40	2.715E-03	.0553	3.409E-03	.0694	3.304E-03	.0672	1.139E-03
1 4481(250)	19.42	2.713E-03	.0552	3.407E-03	.0693	3.302E-03	.0672	1.139E-03
		MODEL HAS LEFT CENTERLINE						
5 4249(250)	20.47	2.637E-03	.0537	3.312E-03	.0674	3.209E-03	.0653	1.107E-03
1 4482(250)	20.50	2.635E-03	.0536	3.310E-03	.0674	3.207E-03	.0653	1.106E-03

Group 51  
7636  
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NASA-RI STS 044C

VA352

AEDCI(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
51	9	ORBITER R6	8.00	859.7	1342	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF	SIREF		
(DEG H)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R=.0175FI)	(R=.0175FI)		
97.3	.088	3.945	3866	7.596E-05	7.831E-08	3.750E 06	4.905E-02	2.098E-02		
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAK)	TBAR(TO)	BETA(TO)				
10P(T)	7636									
SIDE(S)	6964	450	85	.0553	0	0				

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(10)
1 4483(450)	.05	MODEL HAS NOT REACHED CENTERLINE	5408	3.713E-02	7569	3.536E-02	.7208	1.106E-02
2 4250(450)	.05	MODEL HAS NOT REACHED CENTERLINE	5408	3.713E-02	.7569	3.536E-02	.7208	1.106E-02
3 4251(450)	1.10	MODEL HAS NOT REACHED CENTERLINE	4317	2.964E-02	.6043	2.823E-02	.5754	8.87E-03
4 4484(450)	1.13	MODEL HAS NOT REACHED CENTERLINE	4317	2.964E-02	.6043	2.823E-02	.5754	8.87E-03
5 4255(450)	5.38	MODEL HAS NOT REACHED CENTERLINE	3710	2.547E-02	.5193	2.426E-02	.4945	7.595E-03
6 4252(450)	2.18	MODEL HAS NOT REACHED CENTERLINE	3698	2.539E-02	.5177	2.418E-02	.4930	7.582E-03
INJECT TIME = 2.43			3294	2.252E-02	.4611	2.154E-02	.4391	6.737E-03
1 4486(450)	3.25	2.653E-02	3287	2.257E-02	.4600	2.149E-02	.4381	6.720E-03
2 4253(450)	3.25	2.653E-02	2993	2.055E-02	.4190	1.957E-02	.3990	6.120E-03
3 4487(450)	4.33	2.118E-02	2988	2.051E-02	.4182	1.953E-02	.3982	6.109E-03
4 4254(450)	4.33	2.118E-02	2764	1.897E-02	.3688	1.806E-02	.3684	5.653E-03
5 4254(450)	4.33	2.118E-02	2759	1.893E-02	.3682	1.803E-02	.3677	5.644E-03
6 4255(450)	5.38	1.814E-02	2578	1.770E-02	.3608	1.685E-02	.3436	5.270E-03
7 4488(450)	5.41	1.616E-02	2574	1.767E-02	.3603	1.683E-02	.3431	5.263E-03
8 4256(450)	6.46	1.612E-02	2426	1.685E-02	.3395	1.586E-02	.3233	4.941E-03
9 4489(450)	6.48	1.408E-02	2423	1.663E-02	.3391	1.584E-02	.3229	4.934E-03
10 4257(450)	7.53	1.405E-02	2297	1.577E-02	.3216	1.502E-02	.3062	4.697E-03
11 4490(450)	7.56	1.353E-02	2295	1.576E-02	.3212	1.500E-02	.3059	4.693E-03
12 4258(450)	8.61	1.262E-02	2188	1.502E-02	.3063	1.431E-02	.2916	4.474E-03
13 4491(450)	8.63	1.262E-02						
14 4259(450)	9.69	1.190E-02						
15 4492(450)	9.71	1.188E-02						
16 4260(450)	10.76	1.127E-02						
17 4493(450)	10.79	1.126E-02						
18 4261(450)	11.84	1.073E-02						
19 4494(450)	11.86							
20 4262(450)	12.91							

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NASA-RI STS 044C  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL R

GROUP	CONFIG	MODEL	MACH NO	PO(PSTIA)	TO( DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
51	9	ORBITER R6	6.00	859.6	1342	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RMO-INF	MU-INF	RE/FT	HREF	SINF		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(H= .0175FT)		
97.3	.088	3.945	3866	7.595E-05	7.831E-08	3.749E 06	4.905E-02	2.098E-02		
CAMERA	KOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RMQACXK)	TBAH(TO)	BETA(TO)				
TOP(T)	7636									
SIDE(S)	6564									
			450		85	.0553		4.578E-01	6.5961E-01	

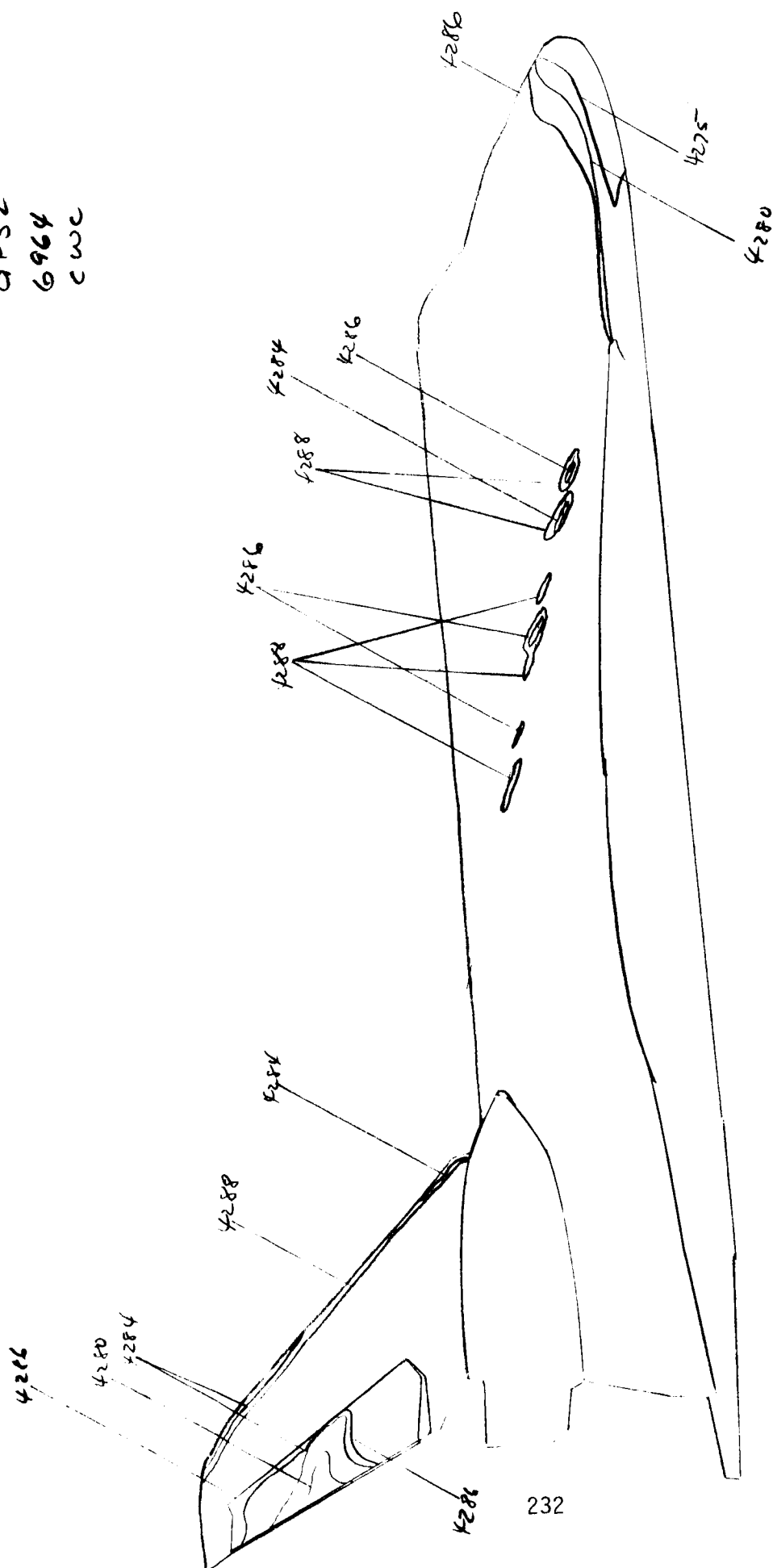
PIC NO	TIME DELTIME	H(10)	H(TO)/HREF	H(.910)	HREF	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)
4495(450)	12.94	1.072E-02	.2185	1.501E-02	.3059	1.429E-02	.2913	4.468E-03	
4263(450)	13.59	1.026E-02	.2093	1.437E-02	.2929	1.368E-02	.2789	4.279E-03	
4496(450)	14.02	1.025E-02	.2090	1.435E-02	.2926	1.367E-02	.2786	4.275E-03	
4264(450)	15.07	9.853E-03	.2009	1.379E-02	.2812	1.313E-02	.2678	4.108E-03	
4497(450)	15.09	9.844E-03	.2007	1.378E-02	.2809	1.312E-02	.2675	4.104E-03	
4498(450)	16.14	9.488E-03	.1934	1.328E-02	.2708	1.265E-02	.2578	3.956E-03	
4265(450)	16.17	9.440E-03	.1933	1.327E-02	.2705	1.264E-02	.2576	3.952E-03	
4499(450)	17.24	9.153E-03	.1866	1.281E-02	.2612	1.220E-02	.2487	3.815E-03	
4266(450)	17.24	9.153E-03	.1866	1.281E-02	.2612	1.220E-02	.2487	3.815E-03	
4500(450)	18.32	8.858E-03	.1806	1.240E-02	.2528	1.181E-02	.2407	3.693E-03	
4267(450)	18.32	8.858E-03	.1806	1.240E-02	.2528	1.181E-02	.2407	3.693E-03	
4268(450)	19.37	8.595E-03	.1753	1.203E-02	.2453	1.146E-02	.2336	3.584E-03	
4501(450)	19.40	8.589E-03	.1751	1.202E-02	.2451	1.145E-02	.2334	3.582E-03	
		MODEL HAS LEFT CENTERLINE							
4269(450)	20.15	8.349E-03	.1702	1.169E-02	.2383	1.113E-02	.2269	3.481E-03	
4502(450)	20.47	8.344E-03	.1701	1.168E-02	.2381	1.112E-02	.2268	3.478E-03	
4270(450)	21.52	8.124E-03	.1656	1.137E-02	.2316	1.083E-02	.2207	3.386E-03	
4503(450)	21.55	8.119E-03	.1655	1.136E-02	.2316	1.082E-02	.2206	3.384E-03	



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GROUP 52

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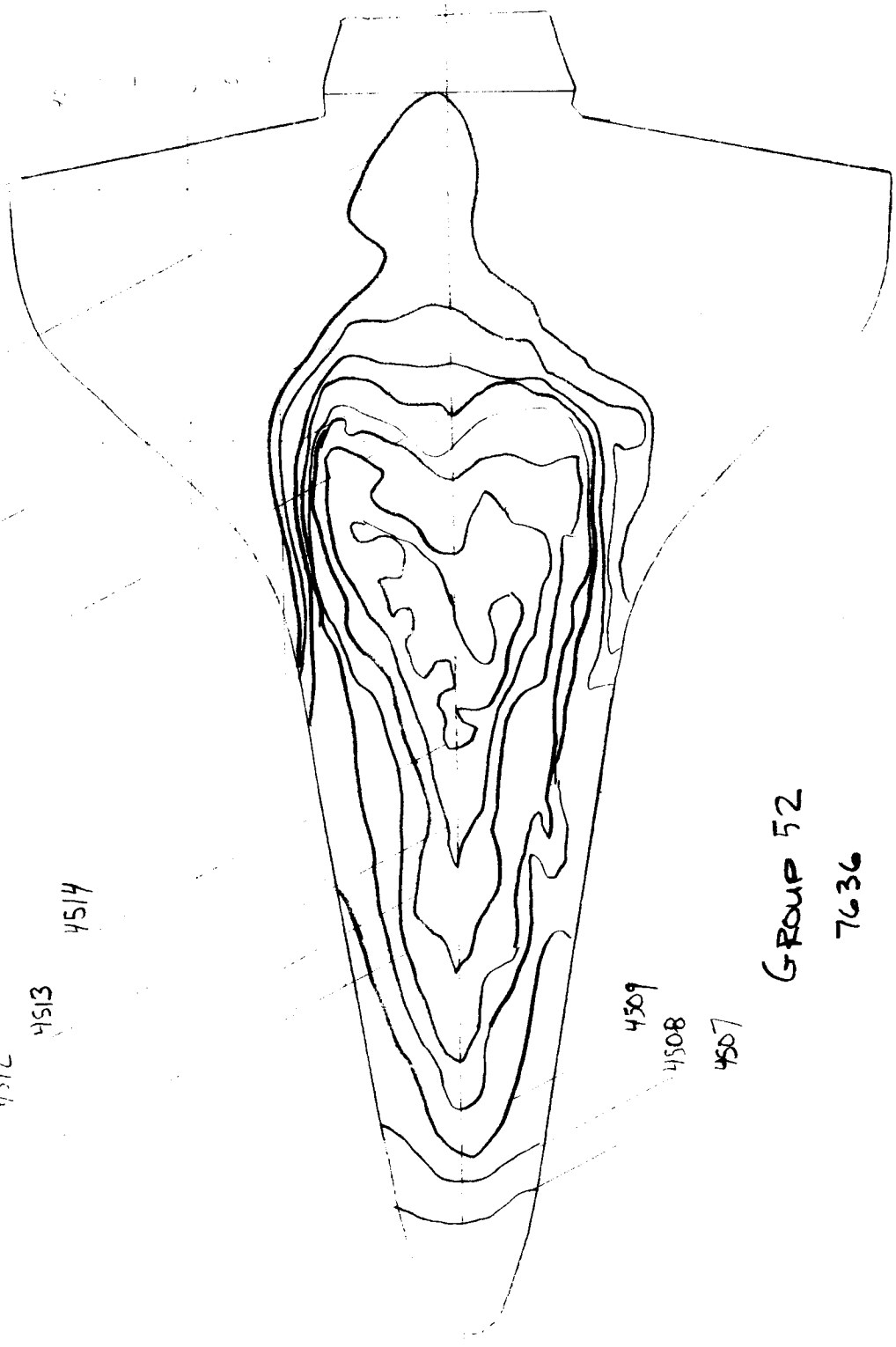
Group 52  
7636  
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4510 4509 4508 4507

4511 4512 4513 4514

4509 4508 4507

Group 52  
7636



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 9/26/73

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

NASA-RI STS OHAC  
 VA352

GROUP CONFIG MODEL MACH NO PO(PSTIA) TO( DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 52 2 ORBITER S 8.00 857.6 1343 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF SIREF  
 (DEG R) (PSIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LB-SEC/FT<sup>2</sup>) (FT-1) (R= .0175FT) (M= .0175FT)  
 97.4 .084 3.935 3868 7.570E-05 7.834E-08 3.736E 06 4.900E-02 2.102E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCAK) TBAR(TO) BETA(TO)  
 10P(T) 7636 84 .0528 0 0  
 SIDE(S) 6564 225

PIC NO	TIME DELT	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 4504(225)	.05	MODEL HAS NOT REACHED CENTERLINE	8.737E-03	1432	8.737E-03	1782	8.479E-03	1729
5 4271(225)	.05	MODEL HAS NOT REACHED CENTERLINE	7.019E-03	1432	8.737E-03	1782	8.479E-03	1729
5 4272(225)	1.10	MODEL HAS NOT REACHED CENTERLINE	5.595E-03	1141	6.965E-03	1420	6.759E-03	1379
1 4505(225)	1.13	MODEL HAS NOT REACHED CENTERLINE	4.730E-03	0977	5.963E-03	1216	5.787E-03	1180
1 4506(225)	2.18	MODEL HAS NOT REACHED CENTERLINE	4.730E-03	0977	5.963E-03	1216	5.787E-03	1180
5 4273(225)	2.18	MODEL HAS NOT REACHED CENTERLINE	4.730E-03	0977	5.963E-03	1216	5.787E-03	1180
INJECT TIME = 2.45								
1 4507(225)	3.25	1.88	7.019E-03	1432	8.737E-03	1782	8.479E-03	1729
5 4274(225)	3.25	1.88	7.019E-03	1432	8.737E-03	1782	8.479E-03	1729
1 4508(225)	4.33	2.95	5.595E-03	1141	6.965E-03	1420	6.759E-03	1379
5 4275(225)	4.33	2.95	5.595E-03	1141	6.965E-03	1420	6.759E-03	1379
1 4509(225)	5.41	4.03	4.730E-03	0977	5.963E-03	1216	5.787E-03	1180
5 4276(225)	5.41	4.03	4.730E-03	0977	5.963E-03	1216	5.787E-03	1180
1 4510(225)	6.48	5.11	4.235E-03	0868	5.297E-03	1080	5.141E-03	1048
5 4277(225)	6.48	5.11	4.235E-03	0868	5.297E-03	1080	5.141E-03	1048
1 4511(225)	7.53	6.16	3.875E-03	0790	4.824E-03	0984	4.681E-03	0955
5 4278(225)	7.53	6.16	3.875E-03	0790	4.824E-03	0984	4.681E-03	0955
1 4512(225)	8.63	7.26	3.569E-03	0728	4.443E-03	0906	4.311E-03	0879
5 4279(225)	8.63	7.26	3.569E-03	0728	4.443E-03	0906	4.311E-03	0879
1 4513(225)	9.71	8.33	3.331E-03	0679	4.146E-03	0845	4.023E-03	0820
5 4280(225)	9.71	8.33	3.331E-03	0679	4.146E-03	0845	4.023E-03	0820
1 4514(225)	10.76	9.39	3.139E-03	0640	3.907E-03	0797	3.786E-03	0772
5 4281(225)	10.76	9.39	3.139E-03	0640	3.907E-03	0797	3.786E-03	0772
1 4515(225)	11.84	10.46	2.973E-03	0606	3.700E-03	0755	3.591E-03	0732
5 4282(225)	11.84	10.46	2.973E-03	0606	3.700E-03	0755	3.591E-03	0732
1 4516(225)	11.86	10.49	2.969E-03	0605	3.696E-03	0754	3.587E-03	0731
5 4283(225)	11.86	10.49	2.969E-03	0605	3.696E-03	0754	3.587E-03	0731
1 4517(225)	12.51	11.54	2.831E-03	0577	3.524E-03	0719	3.420E-03	0697
5 4284(225)	12.51	11.54	2.831E-03	0577	3.524E-03	0719	3.420E-03	0697

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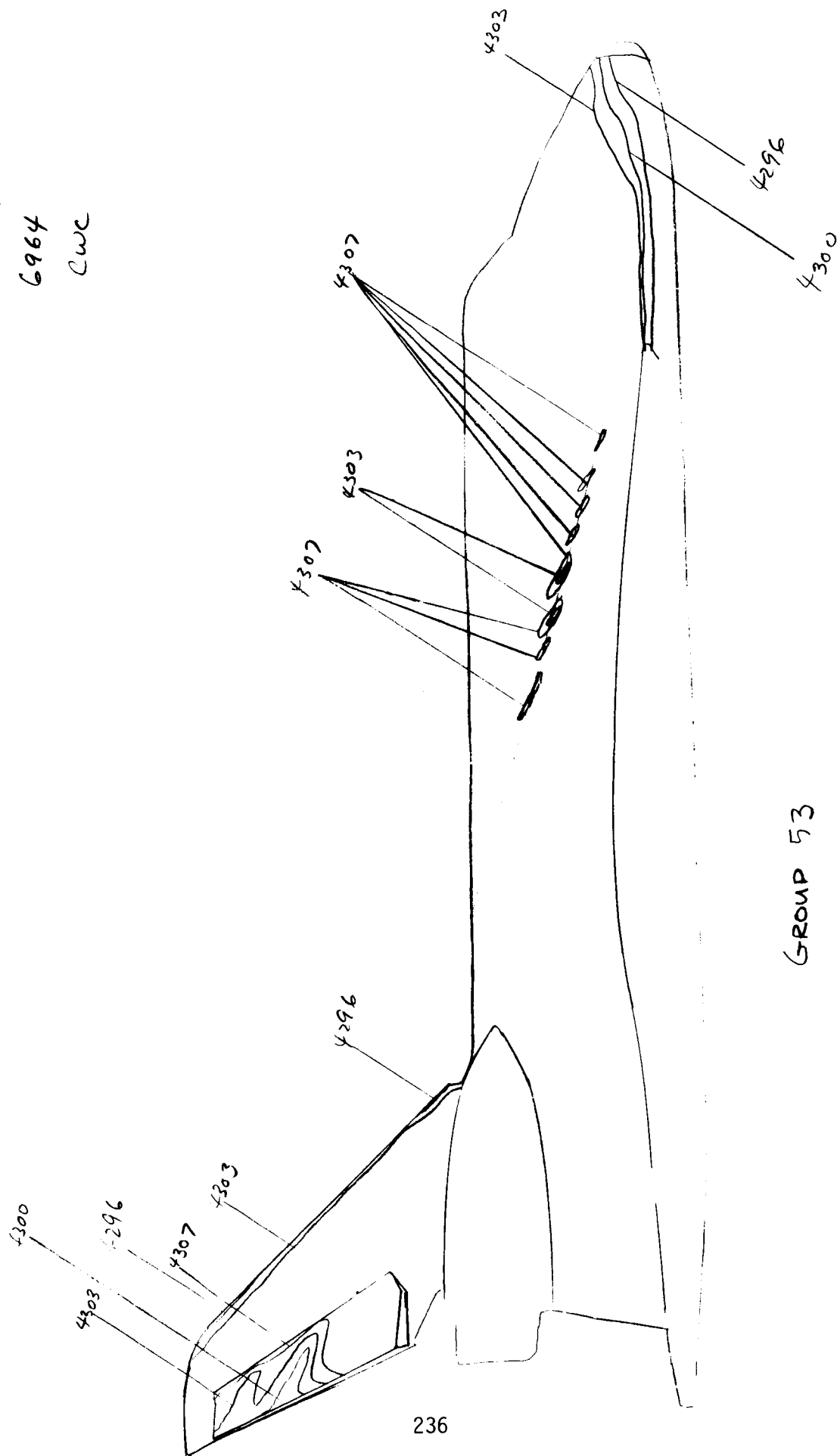
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 9/26/73

NASA-RI STS 0H4C  
 VA352

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
52	2	ORBITER S	8.00	858.9	1344	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(M= .0175FT)		
97.4	.088	3.942	3868	7.582E-05	7.839E-08	3.741E 06	4.904E-02	2.101E-02		
CAMERA		HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMXCCK)	TBAR(10)	BETA(10)			
10P(T)		7636								
510E(S)		6464	225	84	.0528	1.764E-01	1.8210E-01			
PIC NO	TIME	DELTIME	H(10)	H(10)/MREF	H(.910)	H(.910)/MREF	H(.91210)	M(.91210)/MREF	ST(10)	
I 4516(225)	12.54	11.56	2.828E-03	.0577	3.520E-03	.0718	3.416E-03	.0697	1.195E-03	
S 4284(225)	13.59	12.61	2.707E-03	.0552	3.370E-03	.0687	3.270E-03	.0667	1.144E-03	
I 4517(225)	14.02	12.64	2.705E-03	.0552	3.367E-03	.0687	3.267E-03	.0666	1.143E-03	
S 4285(225)	15.07	13.69	2.599E-03	.0530	3.235E-03	.0659	3.139E-03	.0640	1.097E-03	
I 4518(225)	15.09	13.72	2.596E-03	.0529	3.232E-03	.0659	3.136E-03	.0639	1.096E-03	
I 4519(225)	16.17	14.79	2.500E-03	.0510	3.112E-03	.0635	3.020E-03	.0616	1.055E-03	
S 4286(225)	16.17	14.79	2.500E-03	.0510	3.112E-03	.0635	3.020E-03	.0616	1.055E-03	
S 4287(225)	17.22	15.84	2.416E-03	.0493	3.005E-03	.0613	2.918E-03	.0595	1.020E-03	
I 4520(225)	17.24	15.87	2.414E-03	.0492	3.005E-03	.0613	2.916E-03	.0595	1.019E-03	
I 4521(225)	18.32	16.94	2.336E-03	.0476	2.908E-03	.0593	2.822E-03	.0575	9.863E-04	
S 4288(225)	18.32	16.94	2.336E-03	.0476	2.908E-03	.0593	2.822E-03	.0575	9.863E-04	
			MODEL HAS LEFT CENTERLINE							
I 4522(225)	18.55	18.02	2.265E-03	.0462	2.819E-03	.0575	2.736E-03	.0558	9.562E-04	
S 4289(225)	19.40	18.02	2.265E-03	.0462	2.819E-03	.0575	2.736E-03	.0558	9.562E-04	

GP 53  
6964  
CWC

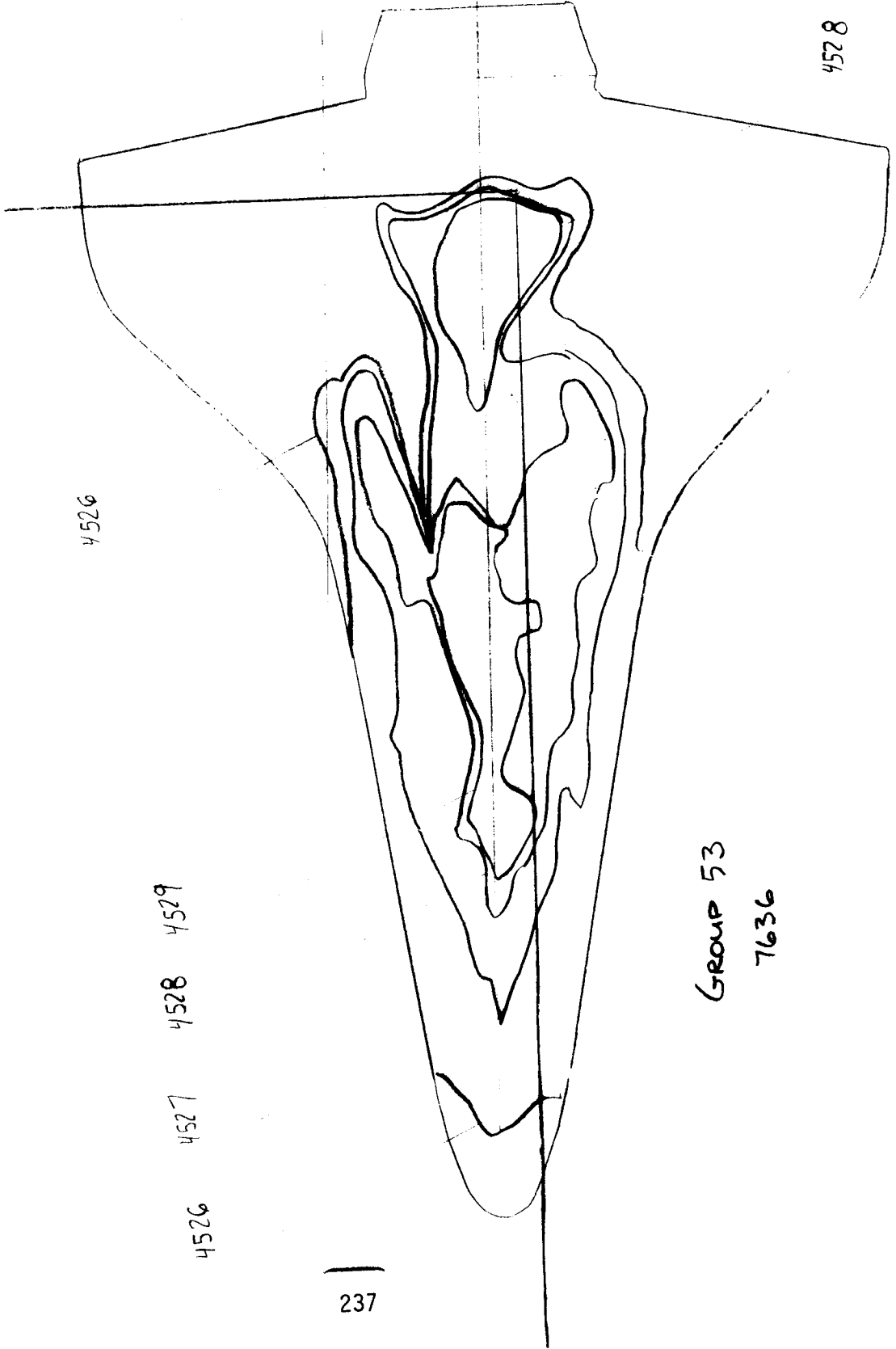


GROUP 53  
6964

Group 53

7636

no.



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9/26/73

NASA-RI STS OH4C

VA352

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL R

GROUP CONFIG MODEL MACH NO PO (PSIA) TO (DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 53 4 ORBITER R1 8.00 857.3 1344 29.99 .01 -30.00 180.00 .00

T-1AF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF STREF  
 (DEG R) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .0175FI) (R= .0175FT)  
 97.4 .088 3.934 3809 7.563E-05 7.843E-08 3.731E 06 4.899E-02 2.103E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCKX) TBAR(TO) BETA(TO)  
 10P(T) 7636  
 SICE(S) 6564 200 83 .0519 0 0

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
4290(200)	.03	MODEL HAS NOT REACHED CENTERLINE						
4523(200)	.05	MODEL HAS NOT REACHED CENTERLINE						
4524(200)	1.10	MODEL HAS NOT REACHED CENTERLINE						
4291(200)	1.10	MODEL HAS NOT REACHED CENTERLINE						
4292(200)	2.15	MODEL HAS NOT REACHED CENTERLINE						
4525(200)	2.18	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.45								
4293(200)	3.23	5.588E-03	.1141	6.904E-03	.1409	6.708E-03	.1369	2.369E-03
4526(200)	3.25	5.551E-03	.1133	6.858E-03	.1400	6.663E-03	.1360	2.353E-03
4294(200)	4.30	4.444E-03	.0907	5.490E-03	.1121	5.334E-03	.1089	1.885E-03
4527(200)	4.33	4.425E-03	.0903	5.467E-03	.1116	5.312E-03	.1084	1.877E-03
4528(200)	5.38	3.800E-03	.0775	4.695E-03	.0958	4.561E-03	.0931	1.610E-03
4295(200)	5.38	3.800E-03	.0775	4.695E-03	.0958	4.561E-03	.0931	1.610E-03
4529(200)	6.46	3.374E-03	.0688	4.168E-03	.0851	4.050E-03	.0826	1.430E-03
4296(200)	6.46	3.374E-03	.0688	4.168E-03	.0851	4.050E-03	.0826	1.430E-03
4530(200)	7.53	3.065E-03	.0625	3.786E-03	.0773	3.679E-03	.0751	1.299E-03
4297(200)	7.53	3.065E-03	.0625	3.786E-03	.0773	3.679E-03	.0751	1.299E-03
4298(200)	8.61	2.823E-03	.0577	3.493E-03	.0713	3.394E-03	.0693	1.198E-03
4531(200)	8.63	2.823E-03	.0576	3.487E-03	.0712	3.388E-03	.0691	1.196E-03
4299(200)	9.69	2.638E-03	.0538	3.259E-03	.0665	3.166E-03	.0646	1.117E-03
4532(200)	9.71	2.638E-03	.0537	3.254E-03	.0664	3.162E-03	.0645	1.116E-03
4300(200)	10.76	2.479E-03	.0506	3.067E-03	.0626	2.979E-03	.0608	1.051E-03
4533(200)	10.79	2.479E-03	.0506	3.063E-03	.0625	2.975E-03	.0607	1.050E-03
4301(200)	11.84	2.351E-03	.0480	2.905E-03	.0593	2.822E-03	.0576	9.958E-04
4534(200)	11.86	2.348E-03	.0479	2.901E-03	.0592	2.819E-03	.0575	9.947E-04
4302(200)	12.91	2.239E-03	.0457	2.766E-03	.0564	2.687E-03	.0548	9.483E-04

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 9/26/73

MASA-HI SYS OHAC  
 VA352

AEDC(AHO+INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
53	4	ORBITER R1	8.00	858.0	134	29.99	.01	-30.00	180.00	.00
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	MREF	SIREF		
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LB-SEC/FT2)	(FT-1)	(R= .0175FT)	(R= .0175FT)			
97.4	.088	3.937	3869	7.843E-05	7.843E-08	3.734E 06	4.901E-02	2.102E-02		
CAMERA	MULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUXCXK)	TBAR(TO)	BETA(TO)				
TOP(T)	7636		83	.0519	1.460E-01	1.4651E-01				
SIDE(S)	6964	200								

PIC NO	TIME DELTIME	H(10)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)	
1 4535(200)	12.54	2.236E-03	.0456	2.763E-03	.0564	2.684E-03	.0548	9.472E-04	
5 4303(200)	13.59	2.141E-03	.0437	2.645E-03	.0540	2.570E-03	.0524	9.070E-04	
1 4536(200)	14.02	2.139E-03	.0436	2.643E-03	.0539	2.567E-03	.0524	9.061E-04	
5 4304(200)	15.07	2.055E-03	.0419	2.539E-03	.0518	2.467E-03	.0503	8.705E-04	
1 4537(200)	15.09	2.053E-03	.0419	2.537E-03	.0518	2.465E-03	.0503	8.698E-04	
5 4305(200)	16.14	1.979E-03	.0404	2.445E-03	.0499	2.375E-03	.0485	8.383E-04	
1 4538(200)	16.17	1.977E-03	.0403	2.443E-03	.0498	2.373E-03	.0484	8.375E-04	
5 4306(200)	17.22	1.910E-03	.0390	2.360E-03	.0481	2.293E-03	.0468	8.091E-04	
1 4539(200)	17.24	1.909E-03	.0389	2.358E-03	.0481	2.291E-03	.0467	8.085E-04	
5 4307(200)	18.30	1.849E-03	.0377	2.284E-03	.0466	2.219E-03	.0453	7.833E-04	
1 4540(200)	18.32	1.847E-03	.0377	2.282E-03	.0466	2.217E-03	.0452	7.828E-04	
	18.80	MODEL HAS LEFT CENTERLINE							
5 4308(200)	19.37	1.793E-03	.0366	2.215E-03	.0452	2.152E-03	.0439	7.593E-04	
1 4541(200)	19.40	1.791E-03	.0365	2.213E-03	.0451	2.150E-03	.0439	7.587E-04	
5 4309(200)	20.45	1.741E-03	.0355	2.151E-03	.0439	2.090E-03	.0427	7.380E-04	
1 4542(200)	20.47	1.740E-03	.0355	2.150E-03	.0439	2.089E-03	.0426	7.375E-04	

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Sup 54  
7041  
N2  
R6

4104

Group 54

7041

(POSSIBLE NOSE CAP TRIP)

4606

461

4/7

4613

4615

4687

4609

90917

5095

1167

5075

6194

411

4604

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4/26/73

ALUC (APO, INC.) ARMOUL AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

NASA-MI SITS OHAC

VA352

GROUP CONFIG MODEL MACH NO POS/SPAL IO(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREREND ROLL-MODEL YAW  
 54 9 UNRETCR M6 8.00 859.0 1345 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF HE/FI MREF SREF  
 (UEG H) (PSJA) (E/SEC) (SLUGS/EI3) (UE-SEK/EI2) (FI-1) (ME .01/SEI) (ME .01/SEI)  
 97.5 .008 3.942 38.71 7.572E-05 7.850E-08 3.734E 06 4.905E-02 2.102E-02

CAMERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAN) TRAN(TU) BETA(TO)  
 TOP(T) 7641  
 SIDE(S) 678 300 H6 .0544 0 0

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(-910)	H(-910)/HREF	H(-91210)	H(-91210)/HREF	SI(10)
5 4333(300)	0.5	MODEL HAS NOT REACHED CENTERLINE						
1 4601(300)	0.8	MODEL HAS NOT REACHED CENTERLINE						
1 4602(300)	1.10	MODEL HAS NOT REACHED CENTERLINE						
5 4334(300)	1.10	MODEL HAS NOT REACHED CENTERLINE						
5 4335(300)	2.15	MODEL HAS NOT REACHED CENTERLINE						
1 4603(300)	2.18	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.45								
1 4604(300)	3.23	1.213E-02	.2472	1.550E-02	.3159	1.498E-02	.2054	5.104E-03
5 4336(300)	3.23	1.213E-02	.2472	1.550E-02	.3159	1.498E-02	.2054	5.104E-03
5 4337(300)	4.28	4.000E-03	.1975	1.238E-02	.2524	1.197E-02	.2440	4.079E-03
1 4605(300)	4.30	4.000E-03	.1967	1.233E-02	.2513	1.191E-02	.2430	4.062E-03
5 4338(300)	5.26	8.274E-03	.1687	1.057E-02	.2156	1.022E-02	.2084	3.483E-03
1 4606(300)	5.28	8.274E-03	.1681	1.054E-02	.2149	1.019E-02	.2077	3.472E-03
1 4607(300)	6.43	5.06	.1496	9.340E-03	.1912	9.007E-03	.1848	3.089E-03
5 4339(300)	6.43	5.06	.1496	9.340E-03	.1912	9.007E-03	.1848	3.089E-03
5 4340(300)	7.48	6.018E-03	.1381	8.535E-03	.1740	8.250E-03	.1682	2.811E-03
1 4608(300)	7.51	6.018E-03	.1359	8.517E-03	.1736	8.233E-03	.1678	2.805E-03
5 4341(300)	8.26	6.157E-03	.1255	7.869E-03	.1604	7.607E-03	.1551	2.592E-03
1 4609(300)	8.28	6.157E-03	.1253	7.856E-03	.1601	7.594E-03	.1548	2.587E-03
1 4610(300)	9.24	5.742E-03	.1171	7.339E-03	.1496	7.094E-03	.1446	2.418E-03
5 4342(300)	9.24	5.742E-03	.1171	7.339E-03	.1496	7.094E-03	.1446	2.418E-03
5 4343(300)	10.29	5.248E-03	.1103	6.912E-03	.1409	6.682E-03	.1362	2.276E-03
1 4611(300)	10.31	5.248E-03	.1101	6.903E-03	.1407	6.673E-03	.1360	2.273E-03
5 4344(300)	11.76	5.121E-03	.1094	6.544E-03	.1334	6.326E-03	.1289	2.155E-03
1 4612(300)	11.79	5.114E-03	.1092	6.536E-03	.1332	6.318E-03	.1288	2.152E-03
1 4613(300)	12.24	4.874E-03	.0994	6.229E-03	.1270	6.022E-03	.1228	2.052E-03
5 4345(300)	12.24	4.874E-03	.0994	6.229E-03	.1270	6.022E-03	.1228	2.052E-03

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 9/26/73

NASA-NI STS CRAC

VA352

AEDC (ARW, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG MODEL MACH NO PO (PSIA) IO (DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 54 9 9 8.00 859.0 1345 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF HE/FI MREF SIMEF  
 (DEG H) (PSIA) (PI/SEC) (SLUGS/FI3) (LBS/SEC/FI2) (FI-1) (HE .0175FI) (HE .0175FI)  
 97.5 .088 3.942 38/1 7.572E-05 7.250E-02 3.734E 06 4.905E-02 2.102E-02

LAPERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAK) TBAK(TO) BEIA(TO)  
 1041 7041 300 80 .0544 2.677E-01 3.0335E-01  
 SUB(S)

PIC NO	TIME DELT	H(TO)	H(TO)/HREF	H(.910)	M(.910)/MREF	M(.912)	H(.912)/HREF	ST(TO)
3 4346(300)	13.59	4.665E-03	.0951	5.962E-03	.1215	5.763E-03	.1175	1.964E-03
1 4614(300)	13.52	4.660E-03	.0950	5.956E-03	.1214	5.757E-03	.1174	1.962E-03
3 4347(300)	13.54	4.476E-03	.0912	5.721E-03	.1166	5.530E-03	.1127	1.884E-03
1 4615(300)	13.59	4.472E-03	.0912	5.716E-03	.1165	5.525E-03	.1126	1.882E-03
1 4616(300)	13.64	4.309E-03	.0878	5.507E-03	.1123	5.323E-03	.1085	1.814E-03
3 4348(300)	13.67	4.309E-03	.0878	5.507E-03	.1123	5.323E-03	.1085	1.814E-03
1 4617(300)	13.72	4.103E-03	.0849	5.320E-03	.1085	5.142E-03	.1048	1.752E-03
3 4349(300)	13.74	4.103E-03	.0849	5.316E-03	.1084	5.138E-03	.1047	1.751E-03
1 4618(300)	13.79	4.007E-03	.0820	5.143E-03	.1049	4.971E-03	.1014	1.695E-03
3 4350(300)	13.82	4.007E-03	.0820	5.143E-03	.1048	4.971E-03	.1013	1.694E-03
1 4619(300)	13.85	3.904E-03	.0796	4.989E-03	.1018	4.823E-03	.0984	1.645E-03
3 4351(300)	13.87	3.904E-03	.0796	4.989E-03	.1018	4.823E-03	.0984	1.645E-03
MULL HAS LEFT CENTERLINE								
1 4620(300)	20.15	3.791E-03	.0773	4.845E-03	.0988	4.684E-03	.0955	1.596E-03
3 4352(300)	20.22	3.791E-03	.0773	4.845E-03	.0988	4.684E-03	.0955	1.596E-03

Group 55  
7041

WV

20 80 70 60 50 40

C.L.

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4635 4631

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243

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4661

Group 55

7041

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5/26/73

NASA-WI SITS ORAC

AEDC (AMU, INC.) AMNOLU AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MACH NO PO (PSIA) 10 (UEB H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND HOLL-MODEL YAW  
 55 10 UNCLIFF H7 1.90 108.9 12.4 29.99 .01 -50.00 180.00 .00

T-INF P-INF U-INF V-INF MU-INF MU-INF HE/FI HREF SREF  
 (UEB H) (PSIA) (PSIA) (FI/SEC) (SLUGS/FI3) (FI/3) (HE .01/5FI) (HE .01/5FI)  
 92.3 .012 .525 37.4 1.100E-05 7.431E-02 5.506E 05 1.772E-02 5.441E-02

CAMERA HOLL NO PAINT TEMP (UEB F) INITIAL TEMP (UEB F) SQUARE ROOT (HNUXCAK) TBAR(TU) BETA(TU)  
 1041 6578 200 H7 .0519 0 0

PIC NO TIME DELTIME H(10) H(TU)/HREF H(.910) H(.9101)/HREF H(.91210) H(.91210)/HREF SI(10)

1 4621(200) .03 MODEL HAS NOT REACHED CENTERLINE  
 2 4351(200) .03 MODEL HAS NOT REACHED CENTERLINE  
 3 4351(200) 1.508 MODEL HAS NOT REACHED CENTERLINE  
 1 4622(200) 1.110 MODEL HAS NOT REACHED CENTERLINE  
 2 4355(200) 2.13 MODEL HAS NOT REACHED CENTERLINE  
 1 4623(200) 2.15 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.40

1	4624(200)	3.60	1.85	6.290E-03	.3538	7.921E-03	.4455	1.675E-03	.4317	1.905E-02
2	4356(200)	3.60	1.85	6.290E-03	.3538	7.921E-03	.4455	1.675E-03	.4317	1.905E-02
1	4625(200)	4.28	2.93	5.004E-03	.2814	6.301E-03	.3544	5.105E-03	.3434	1.516E-02
2	4357(200)	4.28	2.93	5.004E-03	.2814	6.301E-03	.3544	5.105E-03	.3434	1.516E-02
3	4358(200)	5.23	3.98	4.623E-03	.2413	5.406E-03	.3039	5.230E-03	.2945	1.299E-02
1	4626(200)	5.26	4.01	4.279E-03	.2406	5.395E-03	.3030	5.221E-03	.2935	1.295E-02
2	4359(200)	6.41	5.06	3.809E-03	.2144	4.796E-03	.2700	4.647E-03	.2616	1.156E-02
1	4627(200)	6.43	5.08	3.799E-03	.2136	4.785E-03	.2690	4.636E-03	.2606	1.150E-02
2	4360(200)	7.48	6.13	3.435E-03	.1483	4.355E-03	.2467	4.220E-03	.2371	1.048E-02
1	4628(200)	7.51	6.16	3.435E-03	.1480	4.347E-03	.2462	4.211E-03	.2366	1.044E-02
2	4361(200)	8.56	7.21	3.170E-03	.1793	4.017E-03	.2257	3.892E-03	.2187	9.645E-03
3	4361(200)	8.56	7.21	3.170E-03	.1793	4.017E-03	.2257	3.892E-03	.2187	9.645E-03
1	4630(200)	9.64	8.29	2.976E-03	.1672	3.747E-03	.2106	3.631E-03	.2040	8.997E-03
2	4362(200)	9.64	8.29	2.976E-03	.1672	3.747E-03	.2106	3.631E-03	.2040	8.997E-03
3	4363(200)	10.68	9.34	2.843E-03	.1575	3.530E-03	.1983	3.420E-03	.1921	8.467E-03
1	4631(200)	10.71	9.36	2.779E-03	.1572	3.525E-03	.1980	3.416E-03	.1919	8.456E-03
2	4363(200)	11.76	10.41	2.654E-03	.1491	3.343E-03	.1878	3.239E-03	.1819	8.018E-03
3	4364(200)	11.76	10.41	2.654E-03	.1491	3.343E-03	.1878	3.239E-03	.1819	8.018E-03
1	4633(200)	12.84	11.49	2.527E-03	.1419	3.122E-03	.1787	3.063E-03	.1731	7.627E-03
2	4365(200)	12.84	11.49	2.527E-03	.1419	3.122E-03	.1787	3.063E-03	.1731	7.627E-03

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\* UNCLASSIFIED \*  
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9/26/73

NASA-HI STS CM4C  
AEDCTANO, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO MU(PSIA) LU(DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREREND MULL-MODEL YAW  
25 10 GREITER H7 7.90 110.0 1244 29.99 .01 -30.00 180.00 .00

I-INF P-INF U-INF V-INF MU-INF MU-INF RE/FI HREF SINEF  
(DEG H) (PSIA) (FI/SEC) (SLUGS/FI2) (FI/1) (RE .01/5FI) (RE .01/5FI)  
9.3 .01C .534 3719 1.111E-05 7.931E-06 5.561E 05 1.781E-02 5.444E-02

CAMERA MULL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MMUACAR) TBAH(TO) BEIA(TO)  
10P(T) 7041  
510E(5) 6578 200 H7 .0519 1.021E-01 1.0505E-01

PIC NO	TIME DELTME	M(TU)	M(TU)/HREF	M(YU)	M(.91U)/HREF	M(.9121U)	HL .9121U/HREF	SI(10)
4306(200)	13.59	2.419E-03	.1358	3.040E-03	.1710	2.9951E-03	.1657	7.297E-03
4307(200)	13.52	2.410E-03	.1357	3.043E-03	.1708	2.9948E-03	.1655	7.293E-03
4308(200)	13.62	2.411E-03	.1303	2.923E-03	.1640	2.832E-03	.1589	6.999E-03
4309(200)	13.64	2.419E-03	.1302	2.921E-03	.1640	2.830E-03	.1589	6.999E-03
4310(200)	13.64	2.435E-03	.1254	2.814E-03	.1579	2.727E-03	.1530	6.738E-03
4311(200)	13.64	2.435E-03	.1254	2.814E-03	.1579	2.727E-03	.1530	6.738E-03
4312(200)	13.77	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4313(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4314(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4315(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4316(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4317(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4318(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4319(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4320(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4321(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4322(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4323(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4324(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4325(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4326(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4327(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4328(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4329(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4330(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4331(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4332(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4333(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4334(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4335(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4336(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4337(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4338(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4339(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4340(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4341(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4342(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4343(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4344(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4345(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4346(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4347(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4348(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4349(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4350(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4351(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4352(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4353(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4354(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4355(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4356(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4357(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4358(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4359(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4360(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4361(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4362(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4363(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4364(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4365(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4366(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4367(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4368(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4369(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4370(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4371(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4372(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4373(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4374(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4375(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4376(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4377(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4378(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4379(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4380(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4381(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4382(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4383(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4384(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4385(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4386(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4387(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4388(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4389(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4390(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4391(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4392(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4393(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4394(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4395(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4396(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4397(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4398(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4399(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03
4400(200)	17.12	2.437E-03	.1211	2.710E-03	.1525	2.632E-03	.1478	6.510E-03

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NASA-HI STS OH4C

AEDC(AEDC, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO P0(PSTA) T0(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 55 10 UNCLIKR H7 7.90 109.2 12.4 24.99 .01 -30.00 180.00 .00

T-INP P-INP U-INP V-INP MU-INP HE/F1 HREF SINEF  
 (UEG H) (PSTA) (FI/SEC) (SLUGS/ET) (FI-1) (HE .0175FI) (HE .0175FI)  
 92.3 .012 .530 37.18 1.104E-05 7.528E-08 5.528E 05 1.775E-02 5.462E-02

CAMERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAK) TBAR(TO) REIA(TO)  
 10P(T) 7041  
 SLICE(S) 6778 200 87 .0519 1.021E-01 1.6505E-01

PIC NO	TIME DELTME	M(TO)	M(TO)/HREF	M(.910)	M(.910)/HREF	M(.91210)	HL(.91210)/HREF	SI(TO)
1	4640(200) 26.76	1.094E-03	.0954	2.140E-03	.1206	2.074E-03	.1168	5.165E-03
2	4379(200) 27.81	1.005E-03	.0939	2.097E-03	.1182	2.032E-03	.1146	5.066E-03
3	4647(200) 27.83	1.005E-03	.0938	2.096E-03	.1181	2.031E-03	.1144	5.059E-03
4	4648(200) 28.88	1.032E-03	.0921	2.056E-03	.1160	1.992E-03	.1123	4.971E-03
5	4380(200) 28.88	1.032E-03	.0921	2.056E-03	.1160	1.992E-03	.1123	4.971E-03
6	4649(200) 29.56	1.061E-03	.0904	2.017E-03	.1139	1.944E-03	.1103	4.885E-03
7	4381(200) 29.56	1.061E-03	.0904	2.017E-03	.1139	1.944E-03	.1103	4.885E-03
8	4382(200) 31.01	1.073E-03	.0888	1.981E-03	.1119	1.919E-03	.1084	4.802E-03
9	4650(200) 31.04	1.072E-03	.0888	1.980E-03	.1118	1.918E-03	.1083	4.796E-03
10	4383(200) 31.04	1.072E-03	.0888	1.980E-03	.1118	1.918E-03	.1083	4.796E-03
11	4651(200) 32.11	1.044E-03	.0873	1.945E-03	.1099	1.892E-03	.1055	4.722E-03
12	4652(200) 32.11	1.044E-03	.0873	1.945E-03	.1099	1.892E-03	.1055	4.722E-03
13	4384(200) 33.16	1.019E-03	.0859	1.913E-03	.1081	1.853E-03	.1048	4.645E-03
14	4653(200) 33.24	1.044E-03	.0845	1.881E-03	.1064	1.822E-03	.1031	4.573E-03
15	4385(200) 33.24	1.044E-03	.0845	1.881E-03	.1064	1.822E-03	.1031	4.573E-03
16	4386(200) 33.29	1.040E-03	.0842	1.852E-03	.1048	1.794E-03	.1015	4.508E-03
17	4654(200) 33.22	1.040E-03	.0842	1.851E-03	.1047	1.793E-03	.1015	4.504E-03
18	4387(200) 33.27	1.040E-03	.0841	1.823E-03	.1032	1.766E-03	.1000	4.440E-03
19	4655(200) 33.34	1.047E-03	.0840	1.822E-03	.1032	1.766E-03	.1000	4.435E-03
20	4656(200) 37.44	1.020E-03	.0808	1.796E-03	.1017	1.740E-03	.0986	4.381E-03
21	4388(200) 37.44	1.020E-03	.0808	1.796E-03	.1017	1.740E-03	.0986	4.381E-03
22	4657(200) 38.52	1.045E-03	.0796	1.769E-03	.1003	1.714E-03	.0971	4.317E-03
23	4389(200) 38.52	1.045E-03	.0796	1.769E-03	.1003	1.714E-03	.0971	4.317E-03
24	4390(200) 39.27	1.046E-03	.0785	1.745E-03	.0989	1.691E-03	.0958	4.262E-03
25	4658(200) 39.25	1.045E-03	.0785	1.744E-03	.0989	1.690E-03	.0958	4.260E-03

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9/26/73

NASA-HI SIS UN4C

AEDU(ANO,INC.) ANNUL AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO P0(PSTIA) T0(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREPEND ROLL-MODEL YAW  
 55 10 UNCLITEM K7 1.90 107.9 1244 29.99 .01 -30.00 180.00 .00

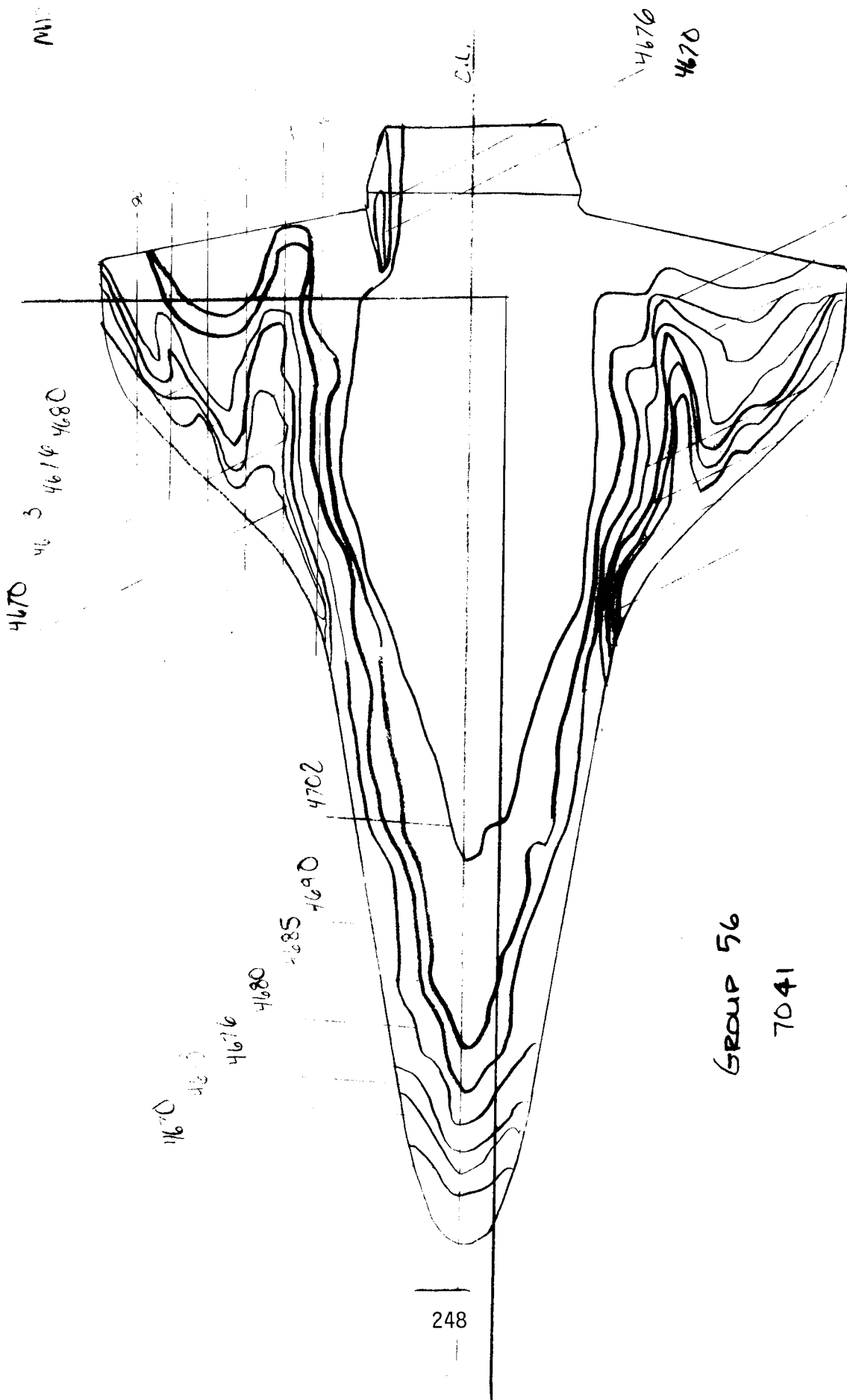
I-INF P-INF U-INF V-INF MU-INF MU-INF ME/FI MREF SIREF  
 UEG H (PSTIA) (FI/SEC) (SLUGS/FI3) (UH-SEC/EI2) (FI-I) (RE .0175FI) (RE .0175FI)  
 92.2 .012 .524 3714 1.091E-05 7.42/E-06 5.460E 05 1.764E-02 5.494E-02

CAMERA MULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (MMGACAK) TRAN(10) REIA(10)  
 10F(1) 7441  
 SILE(5) 6578 200 87 .0519 1.021E-01 1.0505E-01

PIC NO	TIME DELTIME	H(10)	M(10)/MREF	M(.910)	M(.910)/MREF	H(.91210)	H(.91210)/MREF	ST(10)
1 4659(200)	40.65 39.30	1.366E-03	.0775	1.721E-03	.0976	1.667E-03	.0946	4.207E-03
2 4391(200)	40.65 39.30	1.366E-03	.0775	1.721E-03	.0976	1.667E-03	.0946	4.207E-03
1 4600(200)	41.72 40.37	1.366E-03	.0765	1.698E-03	.0963	1.645E-03	.0933	4.150E-03
2 4392(200)	41.72 40.37	1.366E-03	.0765	1.698E-03	.0963	1.645E-03	.0933	4.150E-03
2 4393(200)	42.77 41.43	1.331E-03	.0755	1.676E-03	.0951	1.624E-03	.0921	4.101E-03
1 4601(200)	42.80 41.45	1.331E-03	.0755	1.676E-03	.0951	1.624E-03	.0921	4.100E-03
1 4602(200)	43.85 42.50	1.314E-03	.0746	1.655E-03	.0939	1.603E-03	.0910	4.052E-03
2 4394(200)	43.85 42.50	1.314E-03	.0746	1.655E-03	.0939	1.603E-03	.0910	4.052E-03
MODEL HAS LEFT CENTERLINE								
1 4603(200)	44.83 43.58	1.298E-03	.0737	1.634E-03	.0928	1.583E-03	.0899	4.006E-03
2 4395(200)	44.83 43.58	1.298E-03	.0737	1.634E-03	.0928	1.583E-03	.0899	4.006E-03



Group 56  
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M11



Group 56

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41/26/73

25352

AEUC(AWO, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

T-INT	P-INT	Q-INT	V-INT	HM0-INT	MU-INT	KE/FI	HRF	SIRF
(DEG M)	(PSIA)	(PSIA)	(F/SEC)	(SLUGS/FI3)	(LB-SEC/FI2)	(FI-1)	(R= .0175FI)	(R= .0175FI)
92.4	.01C	.533	3121	1.07E-05	7.440E-08	5.536E 05	1.779E-02	5.455E-02

6050-0000

INJECT TIME =	2.03	2.04	2.05	2.06	2.07	2.08	2.09	2.10	2.11	2.12	2.13	2.14	2.15	2.16	2.17	2.18	2.19	2.20	2.21	2.22	2.23	2.24	2.25	2.26	2.27	2.28	2.29	2.30	2.31	2.32	2.33	2.34	2.35	2.36	2.37	2.38	2.39	2.40	2.41	2.42	2.43	2.44	2.45	2.46	2.47	2.48	2.49	2.50	2.51	2.52	2.53	2.54	2.55	2.56	2.57	2.58	2.59	2.60	2.61	2.62	2.63	2.64	2.65	2.66	2.67	2.68	2.69	2.70	2.71	2.72	2.73	2.74	2.75	2.76	2.77	2.78	2.79	2.80	2.81	2.82	2.83	2.84	2.85	2.86	2.87	2.88	2.89	2.90	2.91	2.92	2.93	2.94	2.95	2.96	2.97	2.98	2.99	3.00	3.01	3.02	3.03	3.04	3.05	3.06	3.07	3.08	3.09	3.10	3.11	3.12	3.13	3.14	3.15	3.16	3.17	3.18	3.19	3.20	3.21	3.22	3.23	3.24	3.25	3.26	3.27	3.28	3.29	3.30	3.31	3.32	3.33	3.34	3.35	3.36	3.37	3.38	3.39	3.40	3.41	3.42	3.43	3.44	3.45	3.46	3.47	3.48	3.49	3.50	3.51	3.52	3.53	3.54	3.55	3.56	3.57	3.58	3.59	3.60	3.61	3.62	3.63	3.64	3.65	3.66	3.67	3.68	3.69	3.70	3.71	3.72	3.73	3.74	3.75	3.76	3.77	3.78	3.79	3.80	3.81	3.82	3.83	3.84	3.85	3.86	3.87	3.88	3.89	3.90	3.91	3.92	3.93	3.94	3.95	3.96	3.97	3.98	3.99	4.00	4.01	4.02	4.03	4.04	4.05	4.06	4.07	4.08	4.09	4.10	4.11	4.12	4.13	4.14	4.15	4.16	4.17	4.18	4.19	4.20	4.21	4.22	4.23	4.24	4.25	4.26	4.27	4.28	4.29	4.30	4.31	4.32	4.33	4.34	4.35	4.36	4.37	4.38	4.39	4.40	4.41	4.42	4.43	4.44	4.45	4.46	4.47	4.48	4.49	4.50	4.51	4.52	4.53	4.54	4.55	4.56	4.57	4.58	4.59	4.60	4.61	4.62	4.63	4.64	4.65	4.66	4.67	4.68	4.69	4.70	4.71	4.72	4.73	4.74	4.75	4.76	4.77	4.78	4.79	4.80	4.81	4.82	4.83	4.84	4.85	4.86	4.87	4.88	4.89	4.90	4.91	4.92	4.93	4.94	4.95	4.96	4.97	4.98	4.99	5.00	5.01	5.02	5.03	5.04	5.05	5.06	5.07	5.08	5.09	5.10	5.11	5.12	5.13	5.14	5.15	5.16	5.17	5.18	5.19	5.20	5.21	5.22	5.23	5.24	5.25	5.26	5.27	5.28	5.29	5.30	5.31	5.32	5.33	5.34	5.35	5.36	5.37	5.38	5.39	5.40	5.41	5.42	5.43	5.44	5.45	5.46	5.47	5.48	5.49	5.50	5.51	5.52	5.53	5.54	5.55	5.56	5.57	5.58	5.59	5.60	5.61	5.62	5.63	5.64	5.65	5.66	5.67	5.68	5.69	5.70	5.71	5.72	5.73	5.74	5.75	5.76	5.77	5.78	5.79	5.80	5.81	5.82	5.83	5.84	5.85	5.86	5.87	5.88	5.89	5.90	5.91	5.92	5.93	5.94	5.95	5.96	5.97	5.98	5.99	6.00	6.01	6.02	6.03	6.04	6.05	6.06	6.07	6.08	6.09	6.
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 9/26/73

NASA-HI SIS OH4C  
 AEDC(AH01, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B  
 VA352

GROUP CONFIG MODEL MACH NO PO(P,SLA) IO(DEV H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND MOLL-MODEL YAM  
 50 4 UNREITER H1 7.90 110.4 1246 29.99 .01 -30.00 180.00 .00

I-INF P-INF U-INF V-INF RHO-INF MU-INF HE/FI HREF S/HREF  
 (UP G H) (PSIA) (PSIA) (FI/SEC) (SLUGS/FI3) (LB-SEC/FI2) (FI-1) (M= .0175FI) (M= .0175FI)  
 92.4 .012 .536 3722 1.114E-05 7.442E-02 5.509E 05 1.785E-02 5.499E-02

CAPERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHGACAK) THAR(TU) BETA(TO)

104(T) 7041  
 SITE(S) 6576 1/5 H3 .0509 1.309E-01 1.2958E-01

PIC NO	TIME DELT(JME	H(TU)	HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)
3 4409(175)	13.52	1.802E-03	1.043	2.322E-03	.1301	2.253E-03	.1262	5.609E-03
1 4677(175)	13.54	1.860E-03	1.041	2.320E-03	.1299	2.251E-03	.1260	5.598E-03
1 4678(175)	14.59	1.767E-03	1.000	2.228E-03	.1248	2.162E-03	.1211	5.378E-03
3 4410(175)	15.52	1.655E-03	1.020	2.228E-03	.1247	2.160E-03	.1210	5.373E-03
1 4679(175)	16.67	1.720E-03	.0963	2.145E-03	.1201	2.081E-03	.1165	5.173E-03
3 4411(175)	16.67	1.720E-03	.0963	2.145E-03	.1201	2.081E-03	.1165	5.173E-03
1 4680(175)	17.14	1.650E-03	.0929	2.071E-03	.1159	2.009E-03	.1125	4.994E-03
3 4413(175)	18.20	1.608E-03	.0899	2.005E-03	.1122	1.943E-03	.1088	4.831E-03
1 4681(175)	18.22	1.598E-03	.0899	2.004E-03	.1122	1.944E-03	.1088	4.832E-03
3 4416(175)	19.27	1.558E-03	.0872	1.944E-03	.1088	1.886E-03	.1055	4.684E-03
1 4683(175)	19.27	1.558E-03	.0872	1.944E-03	.1088	1.886E-03	.1055	4.684E-03
3 4415(175)	20.25	1.514E-03	.0847	1.828E-03	.1056	1.832E-03	.1025	4.549E-03
1 4685(175)	21.42	1.473E-03	.0824	1.837E-03	.1027	1.782E-03	.0997	4.421E-03
3 4416(175)	21.42	1.473E-03	.0824	1.837E-03	.1027	1.782E-03	.0997	4.421E-03
1 4686(175)	22.48	1.435E-03	.0803	1.790E-03	.1001	1.737E-03	.0971	4.310E-03
3 4417(175)	22.50	1.435E-03	.0802	1.789E-03	.1001	1.736E-03	.0971	4.307E-03
1 4687(175)	23.55	1.400E-03	.0783	1.746E-03	.0976	1.694E-03	.0947	4.200E-03
3 4418(175)	23.55	1.400E-03	.0782	1.745E-03	.0976	1.693E-03	.0947	4.198E-03
1 4688(175)	24.63	1.367E-03	.0764	1.706E-03	.0953	1.653E-03	.0925	4.098E-03
3 4419(175)	24.63	1.367E-03	.0764	1.706E-03	.0953	1.653E-03	.0925	4.098E-03
1 4689(175)	25.70	1.337E-03	.0747	1.667E-03	.0932	1.616E-03	.0904	4.007E-03
3 4420(175)	25.70	1.337E-03	.0747	1.667E-03	.0932	1.616E-03	.0904	4.007E-03
1 4690(175)	26.76	1.309E-03	.0731	1.633E-03	.0912	1.584E-03	.0885	3.923E-03
3 4421(175)	26.76	1.309E-03	.0731	1.633E-03	.0912	1.584E-03	.0885	3.923E-03

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5/26/73

WASA-MI SIS OM4C

AEDC(AHO,INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO PO(PSTAL) JO(DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 56 4 CHELTEM H1 1.90 111.0 1240 29.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF W-INF H-INF ME/FT HREF SIREF  
 (DEG H) (PSTAL) (PI/SEC) (SLUGS/FT<sup>3</sup>) (LBS-SEC/FT<sup>2</sup>) (FI-1) (ME .0175FI)  
 92.5 .012 .539 3727 1.119E-05 1.44E-08 5.598E 05 1.790E-02 5.425E-02

CAMERA ROLL NO PAINT IFMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (WHGACAK) THICK(TU) BETA(TU)  
 TOP(TI) 7041  
 SIDE(S) 6978 1/5 83 .0509 1.309E-01 1.2958E-01

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(.910)	M(.910)/HREF	HL .912(10)	HL .912(10)/HREF	SI(10)
1	4684(175) 26.18 25.42	1.308E-03	.0731	1.632E-03	.0911	1.503E-03	.0884	3.917E-03
1	4690(175) 27.03 26.47	1.202E-03	.0718	1.594E-03	.0896	1.551E-03	.0862	3.663E-03
1	4696(175) 27.03 26.47	1.202E-03	.0718	1.594E-03	.0896	1.551E-03	.0862	3.663E-03
1	4691(175) 26.31 27.55	1.257E-03	.0702	1.567E-03	.0875	1.521E-03	.0849	3.763E-03
1	4623(175) 28.91 27.55	1.257E-03	.0702	1.567E-03	.0875	1.521E-03	.0849	3.763E-03
1	4624(175) 29.96 28.60	1.239E-03	.0689	1.538E-03	.0859	1.493E-03	.0834	3.694E-03
1	4692(175) 29.98 28.62	1.239E-03	.0689	1.538E-03	.0859	1.493E-03	.0834	3.694E-03
1	4693(175) 31.04 29.67	1.211E-03	.0676	1.510E-03	.0843	1.465E-03	.0818	3.623E-03
1	4625(175) 31.04 29.67	1.211E-03	.0676	1.510E-03	.0843	1.465E-03	.0818	3.623E-03
1	4694(175) 32.11 30.75	1.109E-03	.0664	1.484E-03	.0828	1.437E-03	.0803	3.556E-03
1	4626(175) 32.11 30.75	1.109E-03	.0664	1.484E-03	.0828	1.437E-03	.0803	3.556E-03
1	4695(175) 33.16 31.80	1.170E-03	.0653	1.459E-03	.0814	1.415E-03	.0790	3.498E-03
1	4627(175) 33.19 31.83	1.109E-03	.0653	1.458E-03	.0814	1.415E-03	.0790	3.498E-03
1	4628(175) 34.24 32.88	1.150E-03	.0642	1.435E-03	.0801	1.392E-03	.0777	3.439E-03
1	4696(175) 34.26 32.90	1.150E-03	.0642	1.435E-03	.0801	1.392E-03	.0777	3.439E-03
1	4629(175) 35.22 33.95	1.112E-03	.0632	1.412E-03	.0788	1.370E-03	.0764	3.384E-03
1	4697(175) 35.24 33.98	1.151E-03	.0632	1.411E-03	.0788	1.369E-03	.0764	3.384E-03
1	4698(175) 36.29 35.03	1.114E-03	.0622	1.390E-03	.0776	1.349E-03	.0753	3.334E-03
1	4630(175) 36.29 35.03	1.114E-03	.0622	1.390E-03	.0776	1.349E-03	.0753	3.334E-03
1	4699(175) 37.47 36.11	1.098E-03	.0612	1.369E-03	.0764	1.328E-03	.0741	3.281E-03
1	4631(175) 37.47 36.11	1.098E-03	.0612	1.369E-03	.0764	1.328E-03	.0741	3.281E-03
1	4632(175) 38.52 37.16	1.082E-03	.0604	1.350E-03	.0753	1.309E-03	.0731	3.235E-03
1	4700(175) 38.54 37.18	1.082E-03	.0604	1.349E-03	.0753	1.309E-03	.0730	3.233E-03
1	4701(175) 39.60 38.23	1.067E-03	.0595	1.330E-03	.0742	1.291E-03	.0720	3.189E-03
1	4633(175) 39.60 38.23	1.067E-03	.0595	1.330E-03	.0742	1.291E-03	.0720	3.189E-03

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9/26/73

NASA-MI STS 044C  
 AEDC(AH-01, INC.) ANNULUS AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

UNGROUP CONFIG MODEL MACH NO P0(P5IA) T0(UEG M) ALPHA-MODEL ALPHA-SECTION ALPHA-PRE-BEND ROLL-MODEL YAW  
 50 4 UNREITER H1 7.90 111.3 1247 24.99 .01 -30.00 180.00 .00

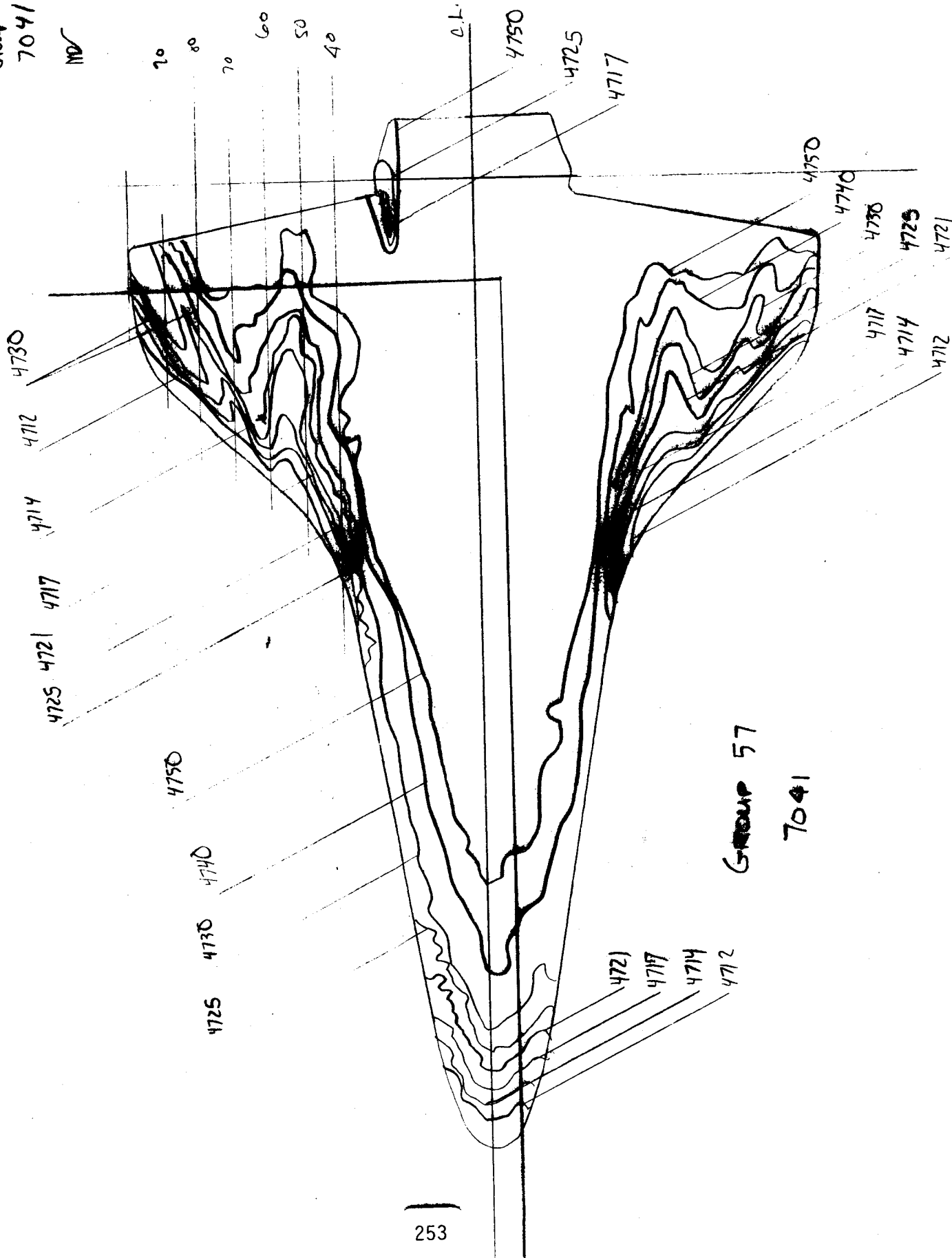
T-INF P-INF U-INF V-INF HRO-INF MU-INF HE/FI HREF SIMEF  
 1000 H1 (P5IA) (FI/SEC) (SLUGS/FI3) (LBS-SEC/FI3) (FI-1) (RE-0175FI) (RE-0175FI)  
 92.5 .012 .540 3722 1.122E-05 7.445E-08 5.611E 05 1.792E-02 5.418E-02

CAMERA ROLL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (KHOXAK) TBAH(TU) BEIA(TU)  
 TOP(T) 7041  
 SIDE(S) 6578 1/5 83 .0504 1.309E-01 1.2958E-01

PIC NO	TIME DELTIME	H(TU)	H(TU)/HREF	H(.910)	M(.910)/HREF	M(.91210)	H(.91210)/HREF	ST(TU)
1 4702(175)	40.67 39.31	1.052E-03	.0587	1.312E-03	.0732	1.273E-03	.0710	3.145E-03
5 4434(175)	40.67 39.31	1.052E-03	.0587	1.312E-03	.0732	1.273E-03	.0710	3.145E-03
5 4435(175)	41.72 40.36	1.038E-03	.0579	1.295E-03	.0722	1.256E-03	.0701	3.101E-03
1 4703(175)	41.75 40.39	1.038E-03	.0579	1.295E-03	.0722	1.256E-03	.0700	3.100E-03
MODEL HAS LEFT CENTERLINE								
5 4436(175)	42.80 41.44	1.025E-03	.0571	1.278E-03	.0713	1.240E-03	.0692	3.060E-03
1 4704(175)	42.82 41.46	1.024E-03	.0571	1.278E-03	.0713	1.240E-03	.0691	3.059E-03
1 4705(175)	43.68 42.51	1.012E-03	.0564	1.262E-03	.0704	1.224E-03	.0683	3.021E-03
5 4437(175)	43.68 42.51	1.012E-03	.0564	1.262E-03	.0704	1.224E-03	.0683	3.021E-03
1 4706(175)	44.55 43.59	9.990E-04	.0557	1.248E-03	.0695	1.209E-03	.0674	2.981E-03
5 4438(175)	44.55 43.59	9.990E-04	.0557	1.248E-03	.0695	1.209E-03	.0674	2.981E-03

Group 57  
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 5/26/73

NASA-KJ STS 044C  
 VA352  
 AEC (ARCO, INC.) AMGLU AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

GM-UP CONFIG MODEL MAICH NU MU (PSIA) TO (DEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND ROLL-MODEL YAW  
 5/ 9 CHEETER H6 7.90 108.8 1250 29.99 .01 -30.00 180.00 .00

I-INF P-INF U-INF V-INF MU-INF MU-INF HREF SINEF  
 (ULS RI) (PSIA) (PI/SEC) (SLUGS/PI3) (PI-1) (PI-1) (M= .0175E1) (M= .0175E1)  
 92.7 .012 .528 3728 1.094E-05 7.406E-08 5.462E 05 1.773E-02 5.489E-02

CAMERA MULL NU PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/ACAK) TBAH(TU) BETA(TU)  
 10P(1) 7641  
 SILE(S) 6578 200 83 .0519 0 0

PIC NO TIME DELINE H(10) H(TU)/HREF H(-910) M(L910)/HREF H(-912(U) H(-912(U)/HREF SI(10)

5 4434(200) .03 MODEL HAS NOT REACHED CENTERLINE .4583 7.877E-03 .4441 1.975E-02  
 1 4707(200) .05 MODEL HAS NOT REACHED CENTERLINE .4552 7.824E-03 .4411 1.961E-02  
 1 4708(200) 1.10 MODEL HAS NOT REACHED CENTERLINE .3639 6.257E-03 .3526 1.567E-02  
 5 4443(200) 4.24 5.130E-03 .2894 6.457E-03 .3639 6.257E-03 .3526 1.567E-02  
 1 4712(200) 5.26 4.309E-03 .2472 5.192E-03 .3108 5.340E-03 .3012 1.338E-02  
 5 4444(200) 5.26 4.309E-03 .2472 5.192E-03 .3108 5.340E-03 .3012 1.338E-02  
 5 4445(200) 5.41 3.905E-03 .2200 4.910E-03 .2766 4.758E-03 .2680 1.191E-02  
 1 4713(200) 5.07 3.896E-03 .2195 4.898E-03 .2760 4.746E-03 .2675 1.189E-02  
 1 4714(200) 7.58 3.555E-03 .1937 4.459E-03 .2511 4.320E-03 .2434 1.081E-02  
 5 4446(200) 7.58 3.555E-03 .1937 4.459E-03 .2511 4.320E-03 .2434 1.081E-02  
 1 4715(200) 8.56 3.270E-03 .1642 4.111E-03 .2315 3.984E-03 .2244 9.970E-03  
 5 4447(200) 8.56 3.270E-03 .1642 4.111E-03 .2315 3.984E-03 .2244 9.970E-03  
 1 4716(200) 9.54 3.049E-03 .1717 3.834E-03 .2159 3.715E-03 .2092 9.290E-03  
 5 4448(200) 9.54 3.049E-03 .1717 3.834E-03 .2159 3.715E-03 .2092 9.290E-03  
 5 4449(200) 10.57 2.812E-03 .1615 3.612E-03 .2032 3.500E-03 .1969 8.743E-03  
 1 4717(200) 10.57 2.812E-03 .1615 3.612E-03 .2032 3.500E-03 .1969 8.743E-03  
 5 4450(200) 11.76 2.720E-03 .1530 3.420E-03 .1924 3.314E-03 .1865 8.278E-03  
 1 4718(200) 11.76 2.720E-03 .1530 3.420E-03 .1924 3.314E-03 .1865 8.278E-03  
 5 4451(200) 12.54 2.589E-03 .1457 3.255E-03 .1832 3.154E-03 .1775 7.881E-03  
 1 4719(200) 12.54 2.589E-03 .1457 3.255E-03 .1832 3.154E-03 .1775 7.881E-03

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 9/26/73

NASA-MI STS 046C

AEUC(AHO, INC.) ANNOLU AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO POI(PSLA) (1000 H) ALPHA-MUDEL ALPHA-SECTION ALPHA-PREEND MOLL-MUDEL YAW  
 51 9 UNELLER H6 7.90 110.1 1251 29.99 .01 -30.00 180.00 .00

I-JAF P-INF U-INF V-INF MU-INF HE/FI HREF SREF  
 (UDEL H) (PSLA) (PI/SEC) (SLUGS/FI3) (H-SEK/FI2) (FI-1) (HE .0175FI) (HE .0175FI)  
 92.8 .01c .535 3729 1.106E-05 7.47UL-0E 5.523E 05 1.744E-0E 5.459E-02

CAMERA MOLL NO PAINT TEMP (DEU F) INITIAL TEMP (DEU F) SQUARE ROOT (RHUACAN) TBAK(TO) BETA(TO)  
 104(1) 641  
 SLOC(S) 657H 200 83 .0519 1.654E-01 1.6900E-01

PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(10)	H(10)/HREF	H(10)	H(10)/HREF	SI(10)
1 4733(200)	27.81 26.44	1.708E-03	.0956	2.145E-03	.1202	2.078E-03	.1165	5.150E-03
5 4405(200)	27.81 26.44	1.708E-03	.0956	2.145E-03	.1202	2.078E-03	.1165	5.150E-03
5 4406(200)	28.06 27.50	1.673E-03	.0937	2.103E-03	.1178	2.048E-03	.1142	5.046E-03
1 4734(200)	28.08 27.52	1.672E-03	.0937	2.102E-03	.1178	2.047E-03	.1141	5.044E-03
5 4407(200)	29.93 26.57	1.641E-03	.0919	2.063E-03	.1155	1.999E-03	.1119	4.946E-03
1 4735(200)	29.96 26.60	1.640E-03	.0919	2.062E-03	.1155	1.998E-03	.1119	4.948E-03
1 4736(200)	31.01 29.65	1.611E-03	.0902	2.025E-03	.1134	1.963E-03	.1099	4.855E-03
5 4408(200)	31.01 29.65	1.611E-03	.0902	2.025E-03	.1134	1.963E-03	.1099	4.855E-03
1 4737(200)	32.09 30.72	1.582E-03	.0886	1.990E-03	.1113	1.928E-03	.1079	4.765E-03
5 4409(200)	32.09 30.72	1.582E-03	.0886	1.990E-03	.1113	1.928E-03	.1079	4.765E-03
5 4476(200)	33.14 31.78	1.558E-03	.0871	1.956E-03	.1095	1.896E-03	.1061	4.686E-03
1 4738(200)	33.16 31.80	1.555E-03	.0870	1.955E-03	.1094	1.895E-03	.1061	4.684E-03
1 4739(200)	34.21 32.85	1.530E-03	.0856	1.924E-03	.1076	1.865E-03	.1043	4.604E-03
5 4471(200)	34.21 32.85	1.530E-03	.0856	1.924E-03	.1076	1.865E-03	.1043	4.604E-03
1 4740(200)	35.29 33.93	1.505E-03	.0842	1.893E-03	.1059	1.835E-03	.1026	4.531E-03
5 4472(200)	35.29 33.93	1.505E-03	.0842	1.893E-03	.1059	1.835E-03	.1026	4.531E-03
5 4473(200)	36.24 34.94	1.483E-03	.0829	1.865E-03	.1043	1.807E-03	.1010	4.458E-03
1 4741(200)	36.27 35.00	1.483E-03	.0829	1.864E-03	.1042	1.806E-03	.1010	4.457E-03
5 4474(200)	37.42 36.06	1.461E-03	.0816	1.837E-03	.1026	1.780E-03	.0995	4.387E-03
1 4742(200)	37.44 36.06	1.460E-03	.0816	1.836E-03	.1026	1.779E-03	.0994	4.386E-03
1 4743(200)	38.49 37.13	1.439E-03	.0804	1.810E-03	.1011	1.754E-03	.0980	4.323E-03
5 4475(200)	38.49 37.13	1.439E-03	.0804	1.810E-03	.1011	1.754E-03	.0980	4.323E-03
5 4476(200)	39.25 38.18	1.419E-03	.0793	1.785E-03	.0997	1.729E-03	.0967	4.263E-03
1 4744(200)	39.27 38.21	1.419E-03	.0793	1.784E-03	.0997	1.729E-03	.0966	4.262E-03
1 4745(200)	40.62 39.26	1.400E-03	.0782	1.760E-03	.0983	1.706E-03	.0952	4.197E-03
5 4477(200)	40.62 39.26	1.400E-03	.0782	1.760E-03	.0983	1.706E-03	.0952	4.197E-03

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7/26/73

NASA-WI SIS OHAC

AEDC (AMU+JAC) ARNOLD AFS, TENNESSEE

VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MULTPL MACH NO PO(P/SIA) (IDEV H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND HOLL-MODEL YAW  
 57 9 UNETTER M6 7.90 111.0 1251 20.99 .01 -30.00 180.00 .00

T-INF P-INF U-INF V-INF HRO-INF MU-INF ME/FI HREF S/HREF  
 (PSIA) (F/SEC) (SLUGS/FI3) (LR-SECFI2) (FI-1) (R= .01/5FI) (R= .01/5FI)  
 .012 .535 3/29 1.115E-05 7.74E-08 5.565E 05 1.791E-02 5.437E-02

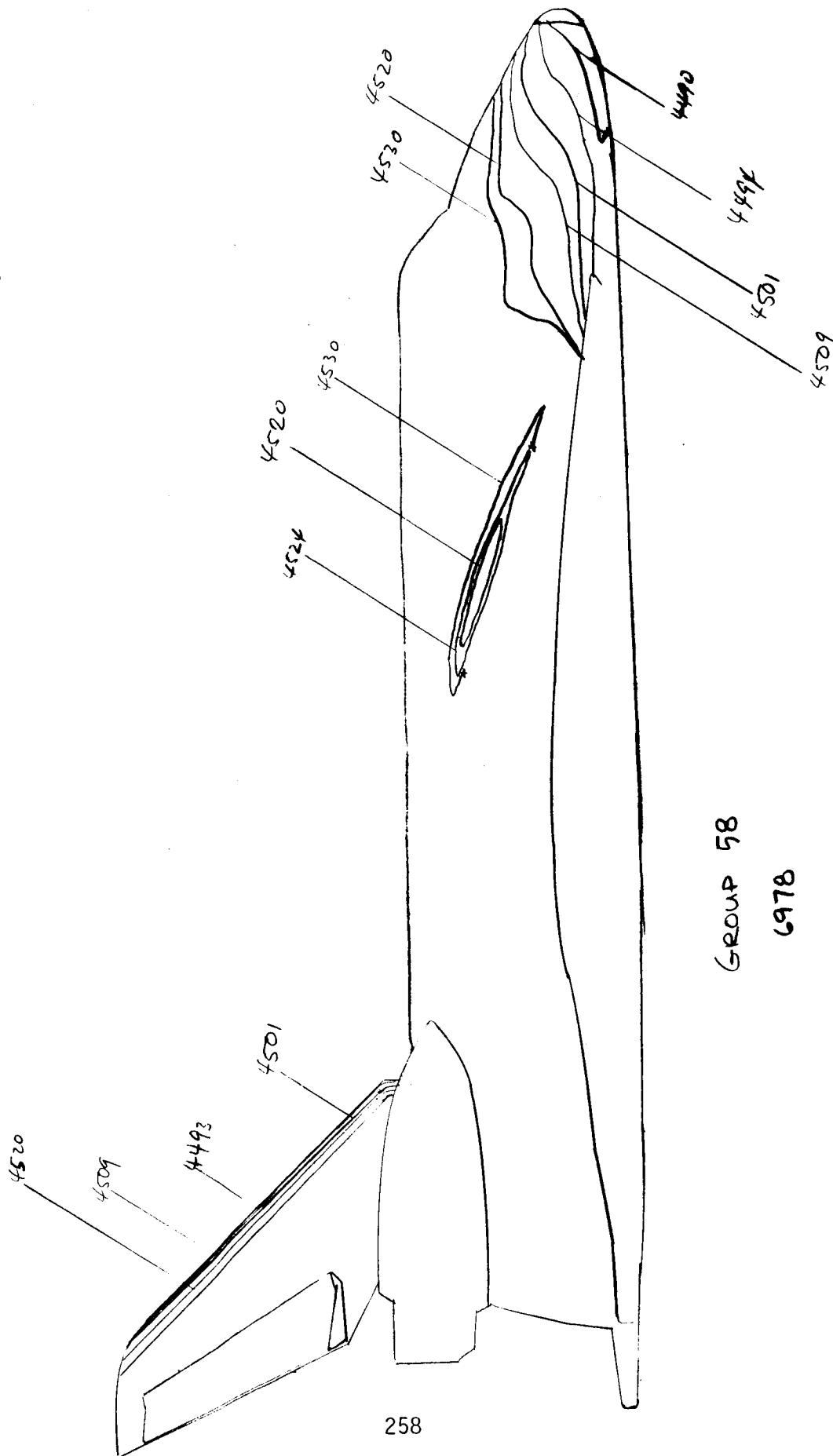
CAPCHA HOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE MUOT (MMUACAK) TBAK(TU) BETA(TU)  
 TOP(T) 7041  
 SIDE(S) 6378 200 83 .0519 1.654E-01 1.6900E-01

PIC NO	TIME	DELTIME	H(10)	H(TU)/HREF	H(.910)	M(.910)/HREF	M(.912TU)	H(.912TU)/HREF	ST(TU)
1	4746(200)	41.70	40.33	.0771	1.736E-03	.0970	1.683E-03	.0940	4.141E-03
5	4748(200)	41.70	40.33	.0771	1.736E-03	.0970	1.683E-03	.0940	4.141E-03
5	4749(200)	42.15	41.39	.0761	1.714E-03	.0957	1.661E-03	.0927	4.084E-03
1	4747(200)	42.17	41.41	.0761	1.714E-03	.0957	1.661E-03	.0927	4.084E-03
5	4480(200)	43.83	42.46	.0751	1.642E-03	.0945	1.640E-03	.0915	4.032E-03
1	4748(200)	43.85	42.49	.0751	1.642E-03	.0944	1.639E-03	.0915	4.031E-03
1	4749(200)	44.50	43.54	.0742	1.671E-03	.0932	1.620E-03	.0904	3.978E-03
5	4481(200)	44.50	43.54	.0742	1.671E-03	.0932	1.620E-03	.0904	3.978E-03
5	4482(200)	45.95	44.59	.0733	1.652E-03	.0921	1.600E-03	.0893	3.931E-03
1	4750(200)	45.98	44.61	.0733	1.651E-03	.0921	1.600E-03	.0893	3.930E-03
MODEL HAS LEFT CENTERLINE									
5	4483(200)	47.03	45.67	.0724	1.632E-03	.0910	1.581E-03	.0882	3.885E-03
1	4751(200)	47.05	45.69	.0724	1.631E-03	.0910	1.581E-03	.0882	3.880E-03
1	4752(200)	48.11	46.74	.0715	1.613E-03	.0899	1.563E-03	.0871	3.833E-03
5	4484(200)	48.11	46.74	.0715	1.613E-03	.0899	1.563E-03	.0871	3.833E-03
1	4753(200)	47.18	47.82	.0707	1.592E-03	.0889	1.545E-03	.0861	3.790E-03
5	4485(200)	47.18	47.82	.0707	1.592E-03	.0889	1.545E-03	.0861	3.790E-03
5	4486(200)	50.53	48.87	.0699	1.578E-03	.0879	1.529E-03	.0852	3.749E-03
1	4754(200)	50.56	48.89	.0699	1.577E-03	.0879	1.528E-03	.0852	3.748E-03

GP 58

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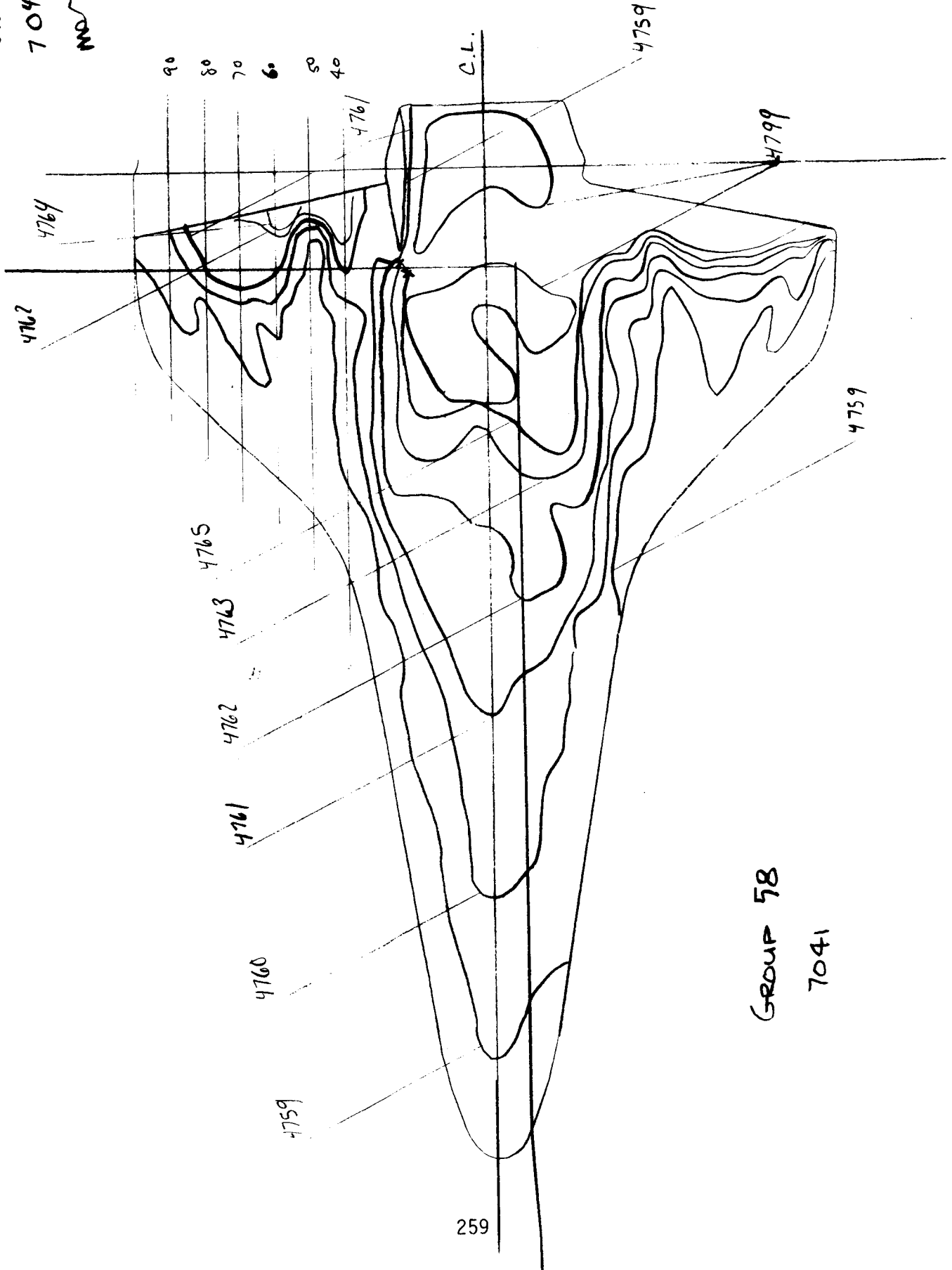
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Group 58  
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9/26/73

NASA-HI STS 014C

AEDC(HAMING) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL H

VA352

GROUP CONFIG MODEL MACH NO P0(PSIA) 10(LEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
58 10 012 7.90 109.0 1255 29.99 .01 -30.00 180.00 .00

T-INF P-INF Q-INF V-INF MU-INF MU-INF HREF SREF  
(DEG H) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LBS/SEC/FT<sup>2</sup>) (FT-LB) (HR .0175FT) (HR .0175FT)

93.1 .012 .525 3735 1.092E-05 7.495E-02 5.440E 05 1.776E-02 5.497E-02

CAMERA ROLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAK) T8AK(T0) BETA(T0)

10P(T) 7041

SLUE(S) 0578 131 84 .0486 0 0

PIC NO TIME DELTME H(T0) H(T0)/HREF H(.910) H(.910)/HREF H(.91210) H(.91210)/HREF ST(T0)

5 4487(131) .03 MODEL HAS NOT REACHED CENTERLINE

5 4755(131) .05 MODEL HAS NOT REACHED CENTERLINE

5 4488(131) 1.00 MODEL HAS NOT REACHED CENTERLINE

5 4758(131) 1.10 MODEL HAS NOT REACHED CENTERLINE

5 4757(131) 2.15 MODEL HAS NOT REACHED CENTERLINE

5 4489(131) 2.15 MODEL HAS NOT REACHED CENTERLINE

INJECT TIME = 2.40

5 4490(131) 3.00 1.85 2.604E-03 .1236 2.709E-03 .1519 2.635E-03 .1478 6.709E-03

5 4759(131) 3.03 1.84 2.170E-03 .1224 2.691E-03 .1509 2.618E-03 .1468 6.664E-03

5 4759(131) 4.08 2.93 1.733E-03 .0883 2.125E-03 .1208 2.098E-03 .1175 5.332E-03

5 4491(131) 4.08 2.93 1.733E-03 .0883 2.125E-03 .1208 2.098E-03 .1175 5.332E-03

5 4760(131) 5.00 4.01 1.500E-03 .0840 1.843E-03 .1033 1.793E-03 .1005 4.556E-03

5 4492(131) 5.00 4.01 1.500E-03 .0840 1.843E-03 .1033 1.793E-03 .1005 4.556E-03

5 4493(131) 5.01 5.06 1.335E-03 .0748 1.640E-03 .0919 1.596E-03 .0894 4.052E-03

5 4761(131) 5.03 5.08 1.331E-03 .0746 1.636E-03 .0916 1.592E-03 .0891 4.042E-03

5 4762(131) 6.03 6.13 1.212E-03 .0678 1.489E-03 .0834 1.449E-03 .0811 3.676E-03

5 4494(131) 7.08 6.13 1.212E-03 .0678 1.489E-03 .0834 1.449E-03 .0811 3.676E-03

5 4763(131) 8.06 7.21 1.118E-03 .0626 1.374E-03 .0769 1.336E-03 .0748 3.387E-03

5 4495(131) 8.06 7.21 1.118E-03 .0626 1.374E-03 .0769 1.336E-03 .0748 3.387E-03

5 4764(131) 9.04 8.29 1.043E-03 .0583 1.281E-03 .0716 1.247E-03 .0697 3.154E-03

5 4496(131) 9.04 8.29 1.043E-03 .0583 1.281E-03 .0716 1.247E-03 .0697 3.154E-03

5 4497(131) 10.09 9.36 9.829E-04 .0549 1.207E-03 .0675 1.174E-03 .0657 2.971E-03

5 4765(131) 10.09 9.36 9.829E-04 .0549 1.207E-03 .0675 1.174E-03 .0657 2.971E-03

5 4498(131) 11.06 10.41 9.230E-04 .0520 1.143E-03 .0639 1.112E-03 .0621 2.811E-03

5 4766(131) 11.06 10.41 9.230E-04 .0520 1.143E-03 .0639 1.112E-03 .0621 2.811E-03

5 4767(131) 12.04 11.49 8.856E-04 .0495 1.088E-03 .0608 1.059E-03 .0591 2.674E-03

5 4499(131) 12.04 11.49 8.856E-04 .0495 1.088E-03 .0608 1.059E-03 .0591 2.674E-03

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VA 552

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Year	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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261

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9/26/73

NASA-WI STS 004C

AEDC(HU, INC.) ARNOLD AFS, TENNESSEE  
VON KARMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO POI(PSIA) TO(DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREEND ROLL-MODEL YAW  
54 10 CRATER 47 7.90 111.6 1250 24.99 .01 -30.00 180.00 .00

T-IMP P-IMP V-IMP MU-IMP MU-IMP ME/PT HREF STREF  
(DEG R) (PSIA) (PSIA) (I/SEC) (SLUGS/FT) (I/SEC) (I/SEC) (I/SEC) (I/SEC) (I/SEC) (I/SEC)  
93.2 .012 .052 3730 1.117E-05 7.500E-08 5.564E 05 1.797E-02 5.435E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MM/GACAK) TBAW(TU) BETAT(TU)  
10P(T) 7641  
SITE(S) 657H 131 H4 .0486 6.607E-02 6.1769E-02

PIC NO	TIME DELTIME	H(10)	MTU/HREF	H(.910)	H(.91210)/HREF	ST(10)
5 4513(131)	27.01	5.836E-04	.0325	7.172E-04	6.977E-04	.0388
1 4781(131)	27.03	5.836E-04	.0324	7.168E-04	6.974E-04	.0388
5 4514(131)	28.08	5.721E-04	.0318	7.030E-04	6.839E-04	.0380
1 4782(131)	28.11	5.718E-04	.0318	7.027E-04	6.836E-04	.0380
1 4783(131)	29.06	5.612E-04	.0312	6.897E-04	6.709E-04	.0373
5 4515(131)	29.06	5.612E-04	.0312	6.897E-04	6.709E-04	.0373
5 4516(131)	31.01	5.512E-04	.0306	6.773E-04	6.589E-04	.0366
1 4784(131)	31.04	5.510E-04	.0306	6.770E-04	6.587E-04	.0366
5 4517(131)	32.09	5.415E-04	.0301	6.654E-04	6.473E-04	.0360
1 4785(131)	32.11	5.412E-04	.0301	6.651E-04	6.470E-04	.0360
1 4786(131)	33.16	5.322E-04	.0296	6.540E-04	6.363E-04	.0354
5 4518(131)	33.16	5.322E-04	.0296	6.540E-04	6.363E-04	.0354
1 4787(131)	34.01	5.236E-04	.0291	6.435E-04	6.260E-04	.0348
5 4519(131)	34.04	5.235E-04	.0291	6.432E-04	6.258E-04	.0348
5 4520(131)	35.09	5.151E-04	.0286	6.332E-04	6.160E-04	.0342
1 4788(131)	35.12	5.151E-04	.0286	6.329E-04	6.158E-04	.0342
5 4521(131)	36.07	5.073E-04	.0282	6.234E-04	6.065E-04	.0337
1 4789(131)	36.09	5.071E-04	.0282	6.232E-04	6.062E-04	.0337
1 4790(131)	37.04	4.997E-04	.0278	6.140E-04	5.973E-04	.0332
5 4522(131)	37.04	4.997E-04	.0278	6.140E-04	5.973E-04	.0332
5 4523(131)	38.09	4.926E-04	.0274	6.053E-04	5.888E-04	.0327
1 4791(131)	38.12	4.924E-04	.0274	6.051E-04	5.886E-04	.0327
5 4524(131)	39.07	4.850E-04	.0270	5.967E-04	5.805E-04	.0322
1 4792(131)	39.08	4.850E-04	.0270	5.965E-04	5.803E-04	.0322
1 4793(131)	40.05	4.789E-04	.0266	5.885E-04	5.725E-04	.0318
5 4525(131)	40.05	4.789E-04	.0266	5.885E-04	5.725E-04	.0318

262

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5/26/73

NASA-HI STS CH4C

AEDCT(ARO,INC), ARNOLD AFS, TENNESSEE  
 VON NARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

VA352

GROUP	CONFIG	MODEL	MACH NO	PO(PSIA)	IO(UEG H)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
58	10	UHEITER H7	7.90	112.1	125b	29.99	.01	-30.00	180.00	.00
1-INF	P-INF	V-INF	RMU-INF	RMU-INF	RMU-INF	HE/PI	MREF	SREF		
UEG H	(PSIA)	(PI/SEC)	(SLUGS/FT <sup>3</sup> )	(HR-SEC/FT <sup>2</sup> )	(FI-1)	(HE .0175FI)	(HE .0175FI)	(HE .0175FI)		
93.2	.012	.544	3736	1.122E-05	7.501E-08	5.588E-05	1.801E-02	5.423E-02		
CAMERA	ROLL NO	PAINT TEMP (UEG F)	INITIAL TEMP (UEG F)	SQUARE ROOT (HROUACAK)	TBAR(TO)	RE(A(TO)				
10F(T)	7041									
SLUG(S)	6778	131	H4	.0486	6.607E-02	6.1769E-02				

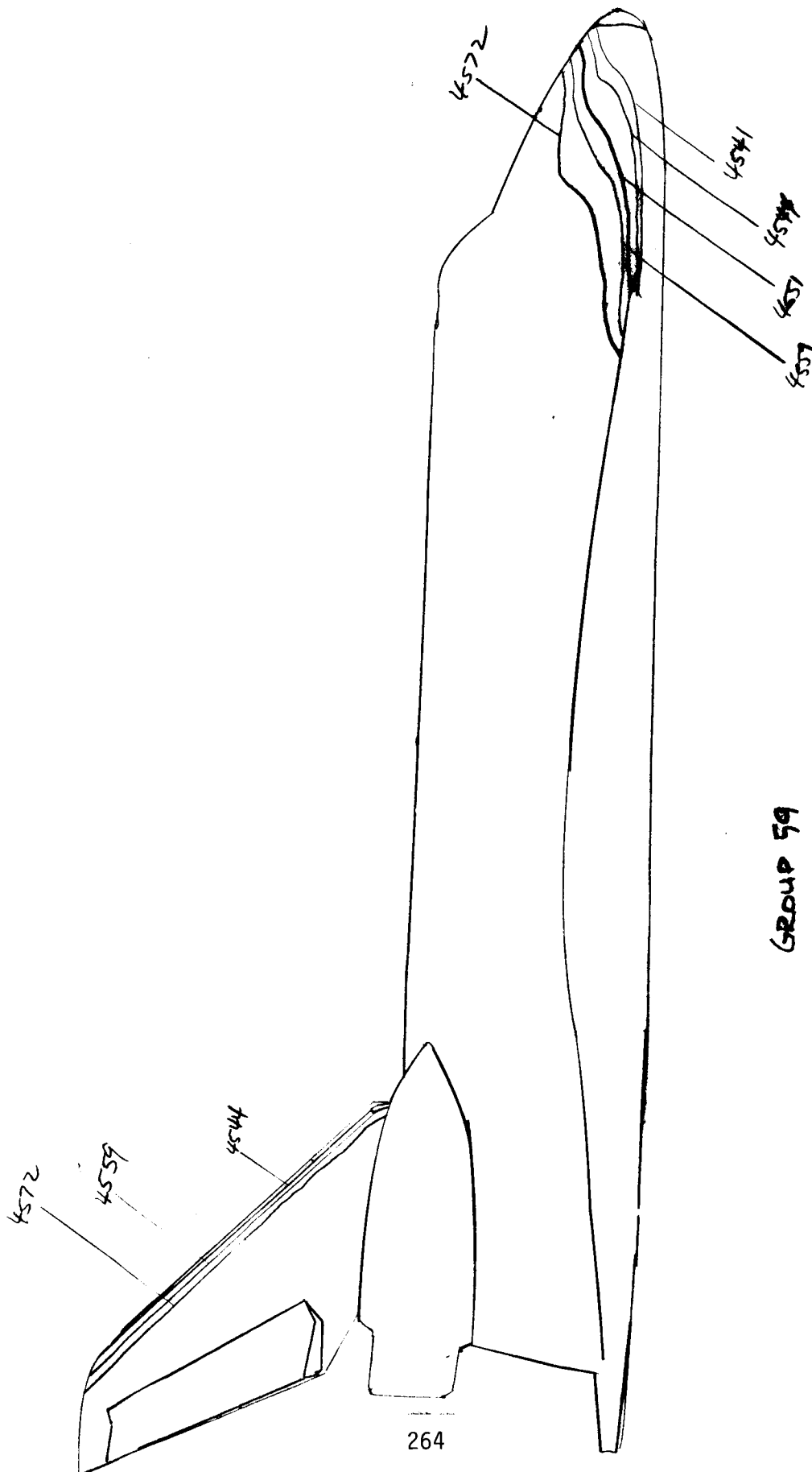
PIC NO	TIME DELINE	H(TU)	HREF	H(.91U)	M(.91U)/HREF	M(.9121U)/HREF	M(.9121U)/HREF	S(TO)
4526(131)	41.70	40.35	4.726E-04	.0262	5.807E-04	.0322	5.650E-04	.0314
4794(131)	41.72	40.37	4.725E-04	.0262	5.806E-04	.0322	5.648E-04	.0314
4527(131)	42.17	41.43	4.664E-04	.0259	5.731E-04	.0318	5.576E-04	.0309
4795(131)	42.18	41.45	4.663E-04	.0259	5.730E-04	.0318	5.574E-04	.0309
4796(131)	43.45	42.50	4.655E-04	.0255	5.654E-04	.0314	5.505E-04	.0305
4528(131)	43.45	42.50	4.655E-04	.0255	5.654E-04	.0314	5.505E-04	.0305
4797(131)	44.53	43.58	4.548E-04	.0252	5.588E-04	.0310	5.436E-04	.0302
4529(131)	44.53	43.58	4.548E-04	.0252	5.588E-04	.0310	5.436E-04	.0302
4530(131)	45.58	44.63	4.444E-04	.0249	5.522E-04	.0306	5.372E-04	.0298
4798(131)	45.60	44.65	4.443E-04	.0249	5.521E-04	.0306	5.371E-04	.0298
4531(131)	47.05	45.71	4.440E-04	.0246	5.456E-04	.0303	5.308E-04	.0294
4799(131)	47.08	45.73	4.439E-04	.0246	5.455E-04	.0303	5.307E-04	.0294
4500(131)	47.55	46.78	4.369E-04	.0243	5.393E-04	.0299	5.247E-04	.0291
4532(131)	48.13	46.78	4.369E-04	.0243	5.393E-04	.0299	5.247E-04	.0291
4801(131)	49.21	47.86	4.339E-04	.0241	5.332E-04	.0296	5.188E-04	.0288
4533(131)	49.21	47.86	4.339E-04	.0241	5.332E-04	.0296	5.188E-04	.0288



GROUP 59

6878

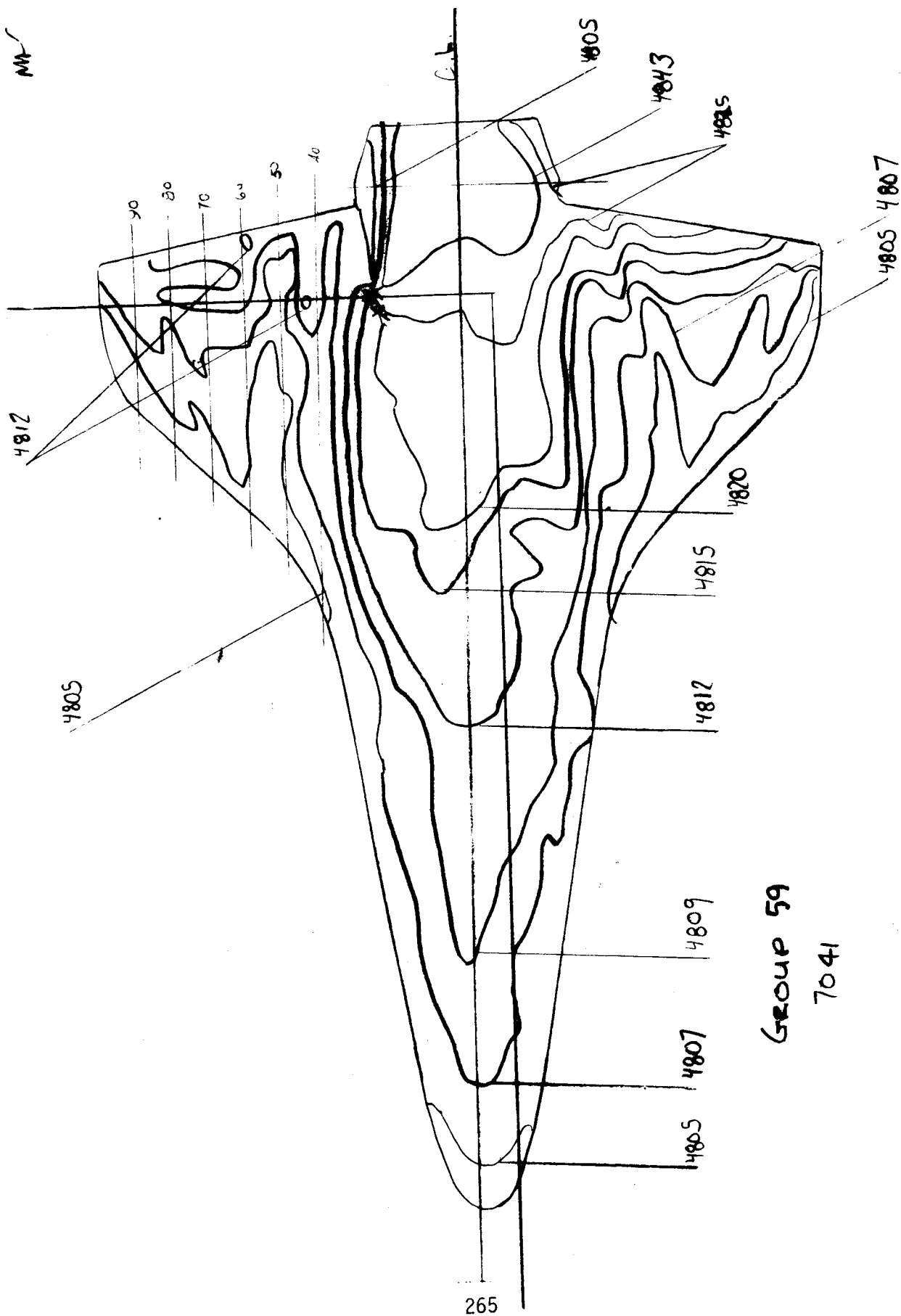
CWC



GROUP 59

6970

Group 59  
7041  
MM



Group 59  
7041

5126173

AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE  
YON KAHMAN GAS DYNAMICS FACILITY  
50 INCH HYPERSONIC TUNNEL B

NASA-HI STS 0H4C

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VA 352

GROUP	CONFIG	MODEL	MACH NO	WU(PSTIA)	10(26G H)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAN
				100.4	1269	20.94	.01	-30.00	180.00	.00

	T-INF	P-INF	V-INF	MU-INF	WE/FI	MREF	SREF
ULG M	(P/LM)	(P/LM)	(F/LM)	(LH-SEC/FI2)	(FI-L)	(SE-0175-F)	(HE-0115-F)
					5.447E 05	1.781E-02	5.991E-02

	MULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUACAK)	TRAN(TU)	BETA(TO)
CAMERA						
OPT(T)	7041					
SIDE(S)	6978	131	83	.0486		0

[illegible]

PIC NO	TIME	UCLTIME	M(U)	M(TU)/M(F)	M(CENTLINE)
3	4534 (131)	0.5	MODEL	HAS NOT REACHED	CENTERLINE
1	4502 (131)	0.5	MODEL	HAS NOT REACHED	CENTERLINE
2	4535 (131)	1.0	MODEL	HAS NOT REACHED	CENTERLINE
1	4503 (131)	1.0	MODEL	HAS NOT REACHED	CENTERLINE
2	4536 (131)	2.13	MODEL	HAS NOT REACHED	CENTERLINE

INJECT TIME = 2.43	3.50	1.85	2.24E-03	.1257	2.752E-03	.1543	2.670E-03	.1501	6.835E-03
S	4537(131)	3.63	1.88	.1248	2.733E-03	.1533	2.658E-03	.1491	6.789E-03
S	4605(131)	3.63	1.88	.1000	2.149E-03	.1228	2.129E-03	.1194	5.437E-03
S	4806(131)	4.68	2.93	.1000	2.149E-03	.1228	2.129E-03	.1194	5.437E-03
S	4538(131)	3.68	2.98	.178E-03	1.870E-03	.1054	1.826E-03	.1024	4.664E-03
S	4539(131)	5.23	3.98	.152E-03	1.870E-03	.1054	1.826E-03	.1024	4.664E-03
S	4540(131)	5.16	4.01	1.52E-03	1.870E-03	.1054	1.826E-03	.1024	4.664E-03
S	4607(131)	5.16	4.01	1.52E-03	1.870E-03	.1054	1.826E-03	.1024	4.664E-03
S	4540(131)	6.41	5.06	1.357E-03	1.666E-03	.0934	1.620E-03	.0909	4.139E-03
S	4541(131)	6.41	5.06	1.357E-03	1.666E-03	.0934	1.620E-03	.0909	4.139E-03
S	4805(131)	6.43	5.08	1.354E-03	1.662E-03	.0932	1.616E-03	.0906	4.125E-03
S	4804(131)	7.48	6.13	1.242E-03	1.513E-03	.0848	1.471E-03	.0825	3.758E-03
S	4541(131)	7.48	6.13	1.242E-03	1.513E-03	.0848	1.471E-03	.0825	3.758E-03
S	4810(131)	8.58	7.21	1.137E-03	1.395E-03	.0783	1.357E-03	.0761	3.466E-03
S	4542(131)	8.56	7.21	1.137E-03	1.395E-03	.0783	1.357E-03	.0761	3.466E-03
S	4543(131)	9.61	8.26	1.062E-03	1.304E-03	.0731	1.268E-03	.0711	3.235E-03
S	4811(131)	9.64	8.29	1.060E-03	1.302E-03	.0730	1.266E-03	.0699	3.231E-03
S	4812(131)	10.69	9.34	9.987E-04	1.226E-03	.0687	1.193E-03	.0669	3.043E-03
S	4544(131)	10.69	9.34	9.987E-04	1.226E-03	.0687	1.193E-03	.0669	3.043E-03
S	4813(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4545(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4546(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4814(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4547(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4815(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4548(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4816(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4549(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4817(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4550(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4818(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4551(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4819(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4552(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4820(131)	11.76	10.41	9.457E-04	1.161E-03	.0651	1.129E-03	.0633	2.882E-03
S	4553(131)	11.76	10.41						

177

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 5/26/73

NASA-NI STS OHAC

AEDC(AHO, INC.) ANNULU AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MACH NO PO (PSIA) TO (DEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND HOLL-MODEL YAW  
 59 4 GREITER H1 7.90 110.0 1259 29.99 .01 -30.00 180.00 .00

T-INT P-INT Q-INT V-INT MU-INT MU-INT RE/FI MHEF SIMEF  
 (PI/SEC) (PSIA) (PI/SEC) (SLUGS/FT<sup>3</sup>) (LBS/SEC) (LBS/SEC) (LBS/SEC) (LBS/SEC) (LBS/SEC) (LBS/SEC)

93.4 .012 .534 37.0 1.099E-05 1.517E-08 5.466E 05 1.785E-02 5.402E-02

CAMERA HOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOCACAK) TBAR(TO) REIA(TO)

10P(T) 7041  
 SUE(S) 678 131 83 .0486 6.707E-02 6.2799E-02

PIC NO	TIME	DELTIME	H(TO)	HREF	H(.910)	H(-.910)/HREF	M(.91210)	M(-.91210)/HREF	SI(TO)
1	4814(131)	12.64	11.49	9.004E-04	1.105E-03	.0504	1.075E-03	.0602	2.741E-03
1	4815(131)	13.29	12.54	8.616E-04	1.058E-03	.0483	1.029E-03	.0576	2.621E-03
2	4547(131)	13.29	12.54	8.616E-04	1.058E-03	.0483	1.029E-03	.0576	2.621E-03
1	4816(131)	13.57	13.62	8.210E-04	1.015E-03	.0463	9.876E-04	.0553	2.518E-03
2	4548(131)	14.57	13.62	8.210E-04	1.015E-03	.0463	9.876E-04	.0553	2.518E-03
1	4817(131)	16.02	14.67	7.909E-04	9.775E-04	.0446	9.515E-04	.0533	2.424E-03
2	4549(131)	16.04	14.69	7.902E-04	9.775E-04	.0446	9.507E-04	.0532	2.422E-03
2	4550(131)	17.09	15.75	7.691E-04	9.444E-04	.0431	9.184E-04	.0514	2.340E-03
1	4818(131)	17.12	15.77	7.695E-04	9.436E-04	.0430	9.177E-04	.0514	2.338E-03
2	4551(131)	18.17	16.82	7.411E-04	9.136E-04	.0417	8.886E-04	.0498	2.264E-03
1	4819(131)	18.20	16.85	7.410E-04	9.130E-04	.0416	8.879E-04	.0497	2.262E-03
1	4820(131)	19.25	17.90	7.214E-04	8.858E-04	.0404	8.614E-04	.0482	2.192E-03
2	4552(131)	19.25	17.90	7.214E-04	8.858E-04	.0404	8.614E-04	.0482	2.192E-03
1	4821(131)	20.22	18.97	7.007E-04	8.603E-04	.0392	8.366E-04	.0468	2.127E-03
2	4553(131)	20.22	18.97	7.007E-04	8.603E-04	.0392	8.366E-04	.0468	2.127E-03
2	4554(131)	21.17	20.03	6.820E-04	8.374E-04	.0382	8.144E-04	.0456	2.073E-03
1	4822(131)	21.10	20.05	6.816E-04	8.369E-04	.0382	8.139E-04	.0456	2.071E-03
1	4823(131)	22.05	21.10	6.644E-04	8.157E-04	.0372	7.933E-04	.0444	2.017E-03
2	4555(131)	22.05	21.10	6.644E-04	8.157E-04	.0372	7.933E-04	.0444	2.017E-03
1	4824(131)	23.03	22.18	6.461E-04	7.957E-04	.0363	7.739E-04	.0433	1.968E-03
2	4556(131)	23.03	22.18	6.461E-04	7.957E-04	.0363	7.739E-04	.0433	1.968E-03
2	4557(131)	24.08	23.23	6.342E-04	7.771E-04	.0354	7.561E-04	.0423	1.923E-03
1	4825(131)	24.00	23.25	6.349E-04	7.771E-04	.0354	7.557E-04	.0423	1.922E-03
1	4826(131)	25.05	24.31	6.191E-04	7.601E-04	.0346	7.392E-04	.0414	1.880E-03
2	4558(131)	25.05	24.31	6.191E-04	7.601E-04	.0346	7.392E-04	.0414	1.880E-03

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 5/26/73

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

NASA-MI STS (HAC)

VA352

GROUP CONFIG MODEL MACH NO PU(PSIA) TO(UEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND ROLL-MODEL YAW  
 59 4 CRITER H1 7.90 110.3 1259 29.99 .01 -30.00 180.00 .00

T-1AF P-1NF U-1NF V-1NF MU-1NF HE/F1 HREF S/HREF  
 (UEG R) (PSIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LBS-SEC/FT<sup>2</sup>) (FI-1) (H= .01/ST-1) (H= .01/ST-1)  
 93.4 .012 .535 37.1 1.101E-05 7.518E-08 5.479E 05 1.787E-02 5.475E-02

CAMERA HULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHQACAK) TBAR(TU) BETA(TO)  
 10P(T) 7041  
 S10E(S) 6978 131 83 .0486 6.707E-02 6.2799E-02

PIC NO	TIME	UETIME	H(TU)	H(TU)/HREF	H(.910)	H(.910)/HREF	H(.912TU)	H(.912TU)/HREF	ST(TU)
1	4P21(131)	25.73	6.058E-04	.0339	7.438E-04	.0416	7.234E-04	.0405	1.838E-03
2	459(131)	25.73	6.058E-04	.0339	7.438E-04	.0416	7.234E-04	.0405	1.838E-03
3	450(131)	26.43	5.936E-04	.0332	7.289E-04	.0408	7.088E-04	.0396	1.801E-03
4	4828(131)	27.81	5.234E-04	.0332	7.289E-04	.0407	7.088E-04	.0396	1.800E-03
5	4561(131)	28.56	5.819E-04	.0325	7.141E-04	.0399	6.948E-04	.0388	1.764E-03
6	4829(131)	28.58	5.816E-04	.0325	7.141E-04	.0399	6.948E-04	.0388	1.764E-03
7	4830(131)	28.59	5.708E-04	.0319	7.009E-04	.0392	6.816E-04	.0381	1.732E-03
8	4562(131)	28.59	5.708E-04	.0319	7.009E-04	.0392	6.816E-04	.0381	1.732E-03
9	4831(131)	31.01	5.604E-04	.0313	6.880E-04	.0385	6.692E-04	.0374	1.700E-03
10	4563(131)	31.01	5.604E-04	.0313	6.880E-04	.0385	6.692E-04	.0374	1.700E-03
11	4564(131)	32.06	5.507E-04	.0308	6.762E-04	.0378	6.576E-04	.0368	1.669E-03
12	4832(131)	32.09	5.505E-04	.0308	6.759E-04	.0378	6.573E-04	.0367	1.668E-03
13	4833(131)	33.14	5.413E-04	.0303	6.646E-04	.0372	6.464E-04	.0361	1.642E-03
14	4565(131)	33.14	5.413E-04	.0303	6.646E-04	.0372	6.464E-04	.0361	1.642E-03
15	4834(131)	34.21	5.324E-04	.0298	6.537E-04	.0365	6.357E-04	.0355	1.614E-03
16	4566(131)	34.21	5.324E-04	.0298	6.537E-04	.0365	6.357E-04	.0355	1.614E-03
17	4567(131)	35.27	5.241E-04	.0293	6.438E-04	.0360	6.258E-04	.0350	1.588E-03
18	4835(131)	35.29	5.239E-04	.0293	6.432E-04	.0360	6.255E-04	.0350	1.588E-03
19	4568(131)	36.34	5.159E-04	.0288	6.335E-04	.0354	6.161E-04	.0344	1.564E-03
20	4836(131)	36.37	5.158E-04	.0288	6.332E-04	.0354	6.159E-04	.0344	1.563E-03
21	4837(131)	37.42	5.062E-04	.0284	6.239E-04	.0349	6.068E-04	.0339	1.540E-03
22	4569(131)	37.42	5.062E-04	.0284	6.239E-04	.0349	6.068E-04	.0339	1.540E-03
23	4838(131)	38.49	5.008E-04	.0280	6.148E-04	.0344	5.980E-04	.0334	1.516E-03
24	4570(131)	38.49	5.008E-04	.0280	6.148E-04	.0344	5.980E-04	.0334	1.516E-03
25	4571(131)	39.55	4.938E-04	.0276	6.063E-04	.0339	5.897E-04	.0329	1.495E-03

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9/26/73

NASA-HI STS OH4C

AEDC(AHO, INC.) AMNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP CONFIG MODEL MALM NO PO(PSIA) IO(UEG R) ALPHA-MODEL ALPHA-SECTION ALPHA-PREHEND MOLL-MODEL YAW  
 59 4 0HEITER H1 7.90 110.0 1259 29.99 .01 -30.00 180.00 .00

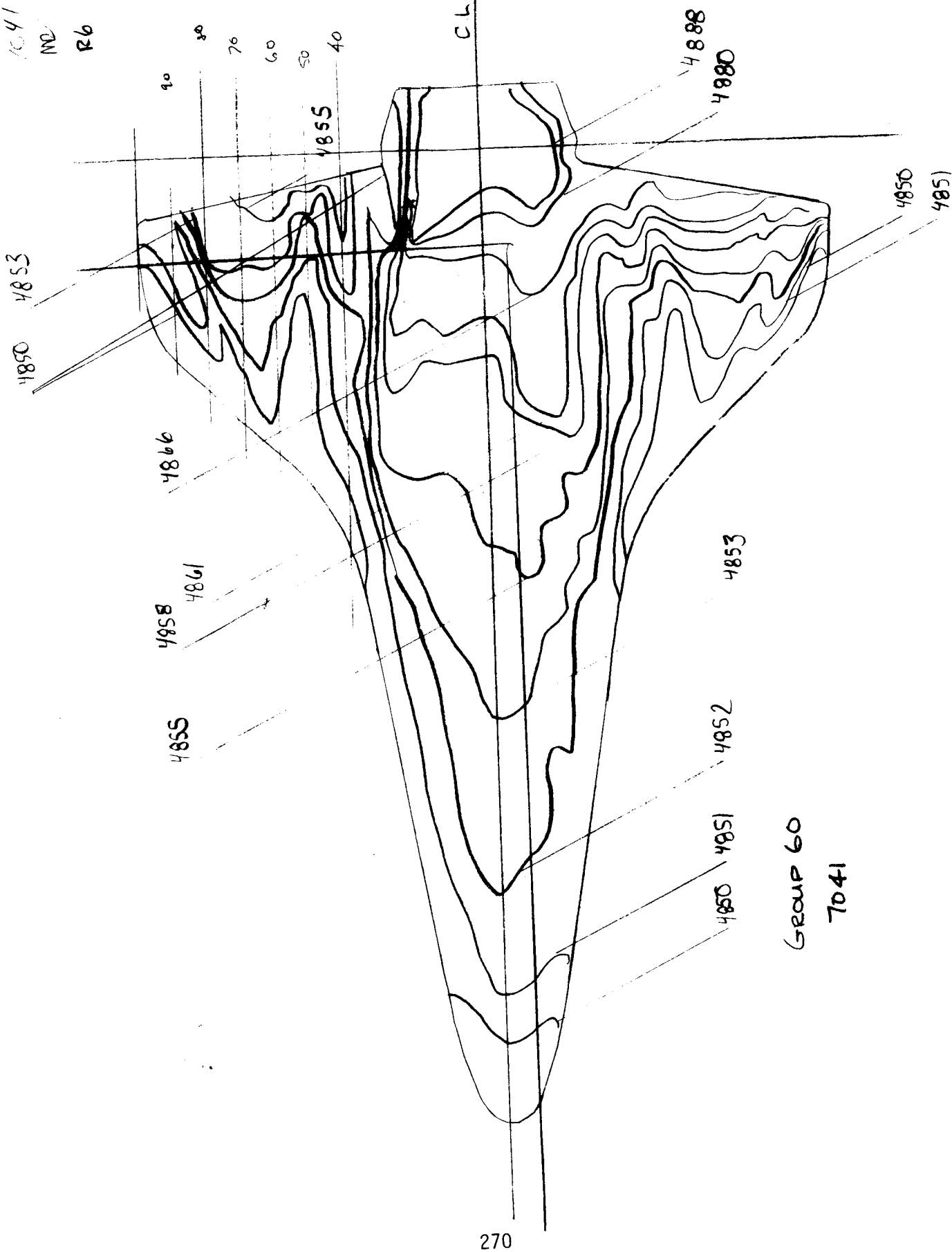
T-INF P-INF U-INF V-INF HMO-INF MU-INF RE/FT MREF SIREF  
 (DEG R) (PSIA) (FT/SEC) (SLUGS/FT<sup>3</sup>) (LBS-SEC/FT<sup>2</sup>) (FT-L) (RZ .0175E1) (RZ .0175E1)  
 93.4 .010 .537 37.1 1.104E-05 7.518E-08 5.494E 05 1.790E-02 5.468E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHQACAK) TBAK(TU) BETA(TO)  
 TOP(T) 7041  
 SIDE(S) 0578 131 83 .0486 6.707E-02 6.2799E-02

PIC NO	TIME DELTIME	H(10)	H(TU)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)
1 4839(131)	39.57	4.937E-04	.0276	6.061E-04	.0339	5.895E-04	.0330	1.496E-03
1 4840(131)	40.62	4.870E-04	.0272	5.980E-04	.0334	5.815E-04	.0325	1.476E-03
3 4872(131)	40.62	4.870E-04	.0272	5.980E-04	.0334	5.815E-04	.0325	1.476E-03
1 4841(131)	41.70	4.805E-04	.0268	5.899E-04	.0330	5.737E-04	.0321	1.455E-03
3 4873(131)	41.70	4.805E-04	.0268	5.899E-04	.0330	5.737E-04	.0321	1.455E-03
3 4874(131)	42.75	4.743E-04	.0265	5.825E-04	.0325	5.694E-04	.0317	1.438E-03
1 4842(131)	42.77	4.742E-04	.0265	5.825E-04	.0325	5.692E-04	.0316	1.435E-03
3 4875(131)	43.83	4.683E-04	.0262	5.750E-04	.0321	5.592E-04	.0312	1.418E-03
1 4843(131)	43.85	4.682E-04	.0262	5.748E-04	.0321	5.590E-04	.0312	1.418E-03
3 4876(131)	44.50	4.625E-04	.0258	5.678E-04	.0317	5.522E-04	.0308	1.399E-03
1 4844(131)	44.50	4.625E-04	.0258	5.678E-04	.0317	5.522E-04	.0308	1.399E-03
3 4877(131)	45.63	4.509E-04	.0255	5.609E-04	.0313	5.455E-04	.0305	1.383E-03
1 4845(131)	45.68	4.510E-04	.0252	5.544E-04	.0310	5.392E-04	.0301	1.367E-03
3 4878(131)	47.05	4.515E-04	.0252	5.544E-04	.0310	5.391E-04	.0301	1.367E-03
1 4846(131)	47.05	4.515E-04	.0252	5.544E-04	.0310	5.391E-04	.0301	1.367E-03

MODEL HAS LEFT CENTERLINE

Group 60  
1041  
ND  
R6



Group 60  
7041

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9/26/73

NASA-HI STS 0H4C

AEDC(AO-INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL B

VA352

GROUP	CONFIG	MODEL	MACH NO	P0(P5IA)	T0(UEG H)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
60	9	UMETER H6	7.90	109.4	1200	29.99	.01	-50.00	180.00	.00
1-INF	P-INF	U-INF	V-INF	RMO-INF	MU-INF	HE/F1	MREF	S/REF		
(UEG H)	(P5IA)	(E1/SEC)	(SLUGS/E13)	(LR-SEC/E12)	(F1-I)	(H= .0175E1)	(H= .0175E1)			
93.4	.014	.531	37.2	1.092E-05	7.523E-08	5.430E 05	1.780E-02	5.499E-02		
CAMERA		ROLL NO	PAINT TEMP (UEG F)	INITIAL TEMP (UEG F)	SQUARE ROOT (MM/CAK)	TBAR(T0)	RE(TA(T0)			
10P(T)		7641								
SLOE(S)		6978	1.31	82	.0486	0	0	0		

PIC NO	TIME UELINE	H(TU)	MREF	H(.910)	M(.910)/MREF	H(.912(TU)	HL .912(TU)/MREF	SI(TU)
1 4847(131)	.05	MODEL HAS NOT REACHED CENTERLINE						
2 4879(131)	.05	MODEL HAS NOT REACHED CENTERLINE						
1 4848(131)	1.10	MODEL HAS NOT REACHED CENTERLINE						
2 4850(131)	1.10	MODEL HAS NOT REACHED CENTERLINE						
1 4849(131)	2.15	MODEL HAS NOT REACHED CENTERLINE						
2 4851(131)	2.15	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 2.43								
1 4850(131)	3.23	2.217E-03	.1279	2.796E-03	.1571	2.719E-03	.1527	6.973E-03
2 4852(131)	3.23	2.217E-03	.1279	2.796E-03	.1571	2.719E-03	.1527	6.973E-03
1 4851(131)	4.28	1.821E-03	.1023	2.238E-03	.1258	2.117E-03	.1221	5.572E-03
2 4852(131)	4.28	1.821E-03	.1023	2.238E-03	.1258	2.117E-03	.1221	5.572E-03
1 4850(131)	5.36	1.557E-03	.0874	1.911E-03	.1073	1.859E-03	.1044	4.762E-03
2 4851(131)	5.36	1.557E-03	.0874	1.911E-03	.1073	1.859E-03	.1044	4.762E-03
1 4852(131)	6.43	1.381E-03	.0776	1.696E-03	.0953	1.649E-03	.0926	4.226E-03
2 4853(131)	6.43	1.381E-03	.0776	1.696E-03	.0953	1.649E-03	.0926	4.226E-03
1 4854(131)	7.48	1.257E-03	.0706	1.543E-03	.0867	1.501E-03	.0843	3.843E-03
2 4855(131)	7.48	1.257E-03	.0706	1.543E-03	.0867	1.501E-03	.0843	3.843E-03
1 4856(131)	8.56	1.159E-03	.0651	1.426E-03	.0799	1.382E-03	.0775	3.548E-03
2 4857(131)	8.56	1.159E-03	.0651	1.426E-03	.0799	1.382E-03	.0775	3.548E-03
1 4858(131)	9.64	1.061E-03	.0607	1.328E-03	.0745	1.291E-03	.0725	3.305E-03
2 4859(131)	9.64	1.061E-03	.0607	1.328E-03	.0745	1.291E-03	.0725	3.305E-03
1 4860(131)	10.71	1.017E-03	.0571	1.249E-03	.0701	1.215E-03	.0682	3.109E-03
2 4861(131)	10.71	1.017E-03	.0571	1.249E-03	.0701	1.215E-03	.0682	3.109E-03
1 4862(131)	11.76	9.645E-04	.0541	1.185E-03	.0664	1.152E-03	.0646	2.943E-03
2 4863(131)	11.76	9.645E-04	.0541	1.185E-03	.0664	1.152E-03	.0646	2.943E-03
1 4864(131)	12.84	9.181E-04	.0515	1.127E-03	.0632	1.096E-03	.0615	2.804E-03
2 4865(131)	12.84	9.181E-04	.0515	1.127E-03	.0632	1.096E-03	.0615	2.804E-03

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 5/26/73

NASA-M1 S1S 0H4C  
 VA352  
 AEDC(AHU-1AC-1) ANNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG MODEL MACH NO P0(P/SLA) 10(UEG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND MULL-MODEL YAW  
 80 9 001TEM H6 7.90 109.7 1260 29.99 .01 -30.00 180.00 .00

T-IMP P-IMP Q-IMP V-IMP RHO-IMP MU-IMP ME/FT HREF SIMEF  
 (UEG H) (PSIA) (P/SLA) (P/SLA) (LBS/SEC) (LBS/SEC/FT2) (FI-1) (HE .0175FI) (K= .0175FI)  
 934 .012 .533 3742 1.045E-05 7.523E-08 5.44E 05 1.783E-02 5.492E-02

CAPELA MULL NO PAINT TEMP (UEG F) INITIAL TEMP (UEG F) SQUARE ROOT (RHUACAK) TRAM(TU) BE(TA(TU)  
 104(1) 7041 82  
 510(5) 6578 131 82 6.829E-02 6.4001E-02

PIC NO	TIME DELTME	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.91210)	H(.91210)/HREF	ST(10)
1 4859(131)	12.66	9.171E-04	.0515	1.126E-03	.0632	1.095E-03	.0614	2.801E-03
1 4860(131)	13.52	8.779E-04	.0492	1.074E-03	.0605	1.048E-03	.0588	2.679E-03
1 4861(131)	13.92	8.779E-04	.0492	1.074E-03	.0605	1.048E-03	.0588	2.679E-03
1 4862(131)	14.59	8.425E-04	.0472	1.035E-03	.0580	1.006E-03	.0564	2.571E-03
1 4863(131)	14.63	8.425E-04	.0472	1.035E-03	.0580	1.006E-03	.0564	2.571E-03
1 4864(131)	14.99	8.111E-04	.0455	9.960E-04	.0559	9.693E-04	.0544	2.477E-03
1 4865(131)	16.04	8.111E-04	.0455	9.960E-04	.0559	9.693E-04	.0544	2.477E-03
1 4866(131)	16.67	7.830E-04	.0439	9.622E-04	.0540	9.356E-04	.0525	2.391E-03
1 4867(131)	17.12	7.830E-04	.0439	9.622E-04	.0540	9.356E-04	.0525	2.391E-03
1 4868(131)	17.76	7.581E-04	.0425	9.310E-04	.0522	9.052E-04	.0507	2.311E-03
1 4869(131)	18.20	7.581E-04	.0425	9.310E-04	.0522	9.052E-04	.0507	2.311E-03
1 4870(131)	18.83	7.350E-04	.0412	9.032E-04	.0506	8.782E-04	.0492	2.241E-03
1 4871(131)	19.45	7.350E-04	.0412	9.032E-04	.0506	8.782E-04	.0492	2.241E-03
1 4872(131)	19.91	7.143E-04	.0400	8.772E-04	.0492	8.529E-04	.0478	2.176E-03
1 4873(131)	20.22	7.143E-04	.0400	8.772E-04	.0492	8.529E-04	.0478	2.176E-03
1 4874(131)	20.25	7.139E-04	.0400	8.760E-04	.0491	8.524E-04	.0478	2.176E-03
1 4875(131)	20.45	6.949E-04	.0389	8.533E-04	.0478	8.297E-04	.0465	2.118E-03
1 4876(131)	21.40	6.949E-04	.0389	8.533E-04	.0478	8.297E-04	.0465	2.118E-03
1 4877(131)	21.40	6.769E-04	.0379	8.313E-04	.0466	8.083E-04	.0453	2.062E-03
1 4878(131)	22.48	6.769E-04	.0379	8.313E-04	.0466	8.083E-04	.0453	2.062E-03
1 4879(131)	22.48	6.607E-04	.0370	8.113E-04	.0455	7.889E-04	.0442	2.012E-03
1 4880(131)	22.16	6.607E-04	.0370	8.113E-04	.0455	7.889E-04	.0442	2.012E-03
1 4881(131)	22.53	6.432E-04	.0361	7.923E-04	.0444	7.704E-04	.0432	1.965E-03
1 4882(131)	23.25	6.432E-04	.0361	7.923E-04	.0444	7.704E-04	.0432	1.965E-03
1 4883(131)	23.24	6.449E-04	.0361	7.919E-04	.0443	7.700E-04	.0431	1.962E-03
1 4884(131)	23.27	6.449E-04	.0361	7.919E-04	.0443	7.700E-04	.0431	1.962E-03
1 4885(131)	24.63	6.308E-04	.0353	7.746E-04	.0434	7.531E-04	.0422	1.919E-03
1 4886(131)	24.32	6.308E-04	.0353	7.746E-04	.0434	7.531E-04	.0422	1.919E-03
1 4887(131)	25.68	6.308E-04	.0353	7.746E-04	.0434	7.531E-04	.0422	1.919E-03
1 4888(131)	25.68	6.308E-04	.0353	7.746E-04	.0434	7.531E-04	.0422	1.919E-03

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9126173

WASA-KI STS OH4C

GROUP	CONFIG	MODEL	MAJOR NO	PO (PSIA)	TO (DEG K)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	KOLL-MODEL	YAM
60	9	CHILLER K6	7.90	110.1	1250	29.99	.01	-30.00	180.00	.00

T = [AF	P = [INF	U = [INF	V = [INF	WH0 = [INF	MU = [INF	RE/FI	HKEF	SIRF
(DEG, H)	(P2IA)	(P2IA)	(F1ZEC)	(SLUGS/F13)	(LH=SLUGS/F12)	(F1=1)	(H= .0175F1)	(H= .0175F1)
93.4	.01C	.035	374Z	1.099E-05	7.523E-04	5.464E 05	1.786E-02	5.482E-02

[illegible]

104 (1)	7041	H2	6.029E-02	6.4001E-02
510E(S)	6578	131	.0486	

PIC NO	TIME	DELTIME	M(10)	M(10)/HREF	M(.910)	M(.910)/HREF	HL	HL(.91210)/HREF	ST(10)
1	4872(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
2	4873(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
3	4874(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
4	4875(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
5	4876(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
6	4877(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
7	4878(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
8	4879(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
9	4880(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
10	4881(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
11	4882(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
12	4883(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
13	4884(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
14	4885(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
15	4886(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
16	4887(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
17	4888(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
18	4889(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
19	4890(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
20	4891(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
21	4892(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
22	4893(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
23	4894(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
24	4895(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
25	4896(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
26	4897(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
27	4898(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
28	4899(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
29	4900(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
30	4901(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
31	4902(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
32	4903(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
33	4904(131)	25.76	25.39	6.113E-04	.0346	7.580E-04	.0424	7.370E-04	1.878E-03
34	4905(131)	25.76	25.39	6.113E-04	.0346				

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NASA-MI SITS 0M4C AEDCTAMU, INC.) ARNOLD AFS, TENNESSEE  
 VON KARMAN GAS DYNAMICS FACILITY  
 50 INCH HYPERSONIC TUNNEL R

VAJ52

GROUP CONFIG MODEL MAJOR NO POS(P)IA) TO(UG H) ALPHA-MODEL ALPHA-SECTION ALPHA-PREBEND ROLL-MODEL YAW  
 00 9 UNREITER M6 7.90 110.3 1260 29.99 .01 -30.00 180.00 .00

T-IMP P-IMP U-IMP V-IMP MU-IMP MU-IMP HE/FI HREF SREF  
 (PSIA) (PSIA) (PSIA) (PSIA) (SLUGS/FI) (SLUGS/FI) (FI-1) (FI-1) (FI-1) (FI-1) (FI-1) (FI-1) (FI-1) (FI-1) (FI-1) (FI-1)

93.4 .012 .035 37.42 1.101E-05 7.523E-08 5.474E 05 1.787E-02 5.477E-02

CAMERA MOLL NO PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUACAN) TBAH(TU) BEIA(TU)  
 1041 7041  
 5102(5) 6778 131 82 .0486 6.829E-02 6.4001E-02

PIC NO	TIME DELTIME	H(TU)	H(TU)/HREF	H(.910)	M(.910)/HREF	HI(.91210)	HI(.91210)/HREF	ST(10)
1 4804(131)	39.60	5.030E-04	.0281	6.177E-04	.0346	6.006E-04	.0336	1.528E-03
2 4617(131)	40.65	4.903E-04	.0278	6.094E-04	.0341	5.925E-04	.0331	1.506E-03
3 4805(131)	40.67	4.901E-04	.0278	6.092E-04	.0341	5.924E-04	.0331	1.507E-03
4 4806(131)	41.72	4.870E-04	.0274	6.012E-04	.0336	5.848E-04	.0327	1.487E-03
5 4618(131)	41.72	4.870E-04	.0274	6.012E-04	.0336	5.848E-04	.0327	1.487E-03
6 4619(131)	42.80	4.832E-04	.0270	5.934E-04	.0332	5.770E-04	.0323	1.466E-03
7 4619(131)	42.80	4.832E-04	.0270	5.934E-04	.0332	5.770E-04	.0323	1.466E-03
8 4620(131)	43.85	4.772E-04	.0267	5.860E-04	.0328	5.698E-04	.0319	1.448E-03
9 4808(131)	43.88	4.771E-04	.0267	5.859E-04	.0328	5.697E-04	.0319	1.449E-03
10 4809(131)	44.93	4.713E-04	.0264	5.787E-04	.0324	5.627E-04	.0315	1.431E-03
11 4621(131)	45.93	4.713E-04	.0264	5.787E-04	.0324	5.627E-04	.0315	1.431E-03
12 4890(131)	46.00	4.655E-04	.0260	5.717E-04	.0320	5.559E-04	.0311	1.414E-03
13 4622(131)	46.00	4.655E-04	.0260	5.717E-04	.0320	5.559E-04	.0311	1.414E-03
14 4891(131)	47.08	4.600E-04	.0257	5.649E-04	.0316	5.493E-04	.0307	1.397E-03
15 4623(131)	47.08	4.600E-04	.0257	5.649E-04	.0316	5.493E-04	.0307	1.397E-03

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